

An Overview of the ILS Market

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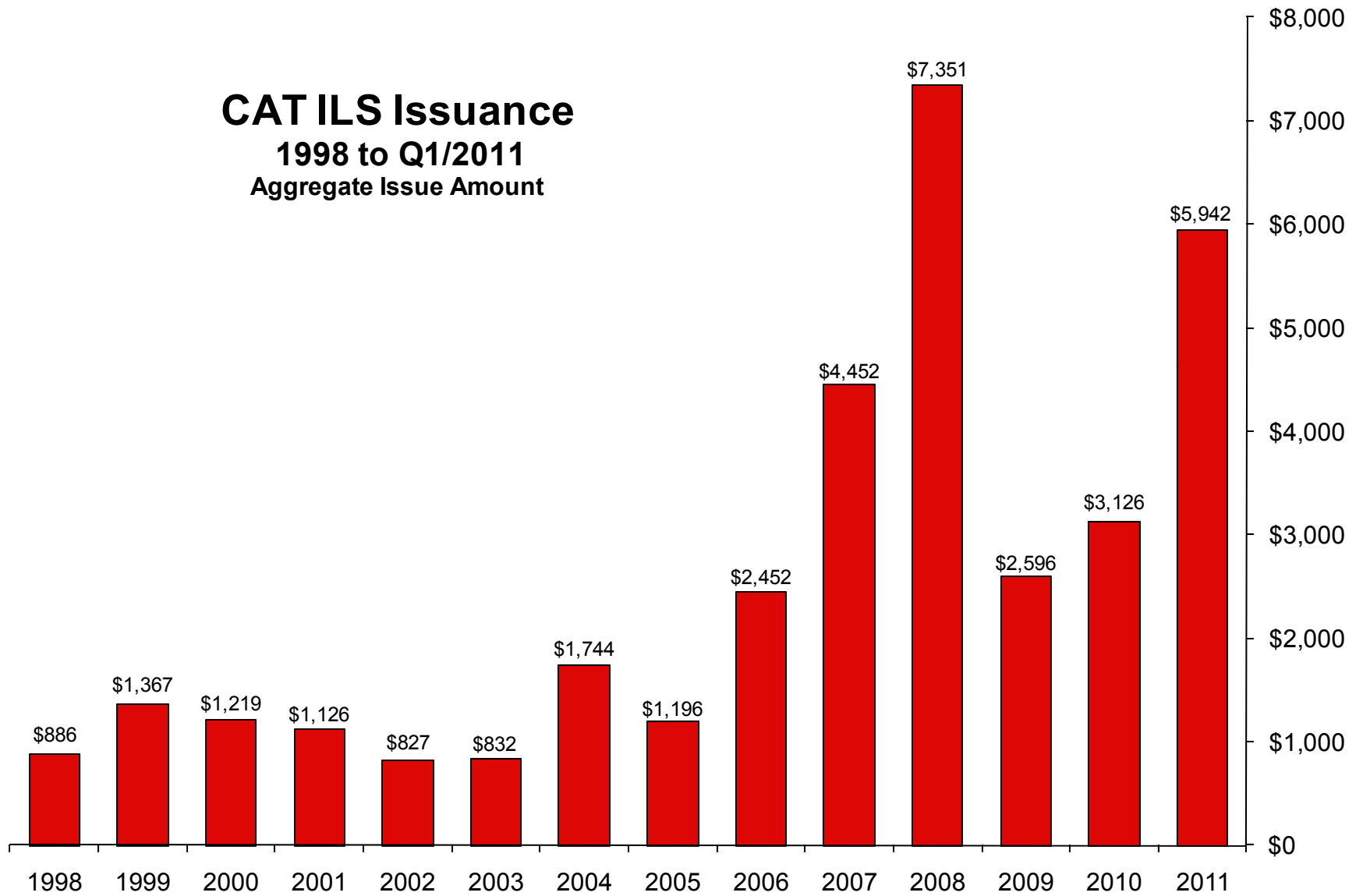
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CAS Rate Making Seminar
New Orleans Marriott Hotel, New Orleans
March 21, 2011

CAT ILS Issuance

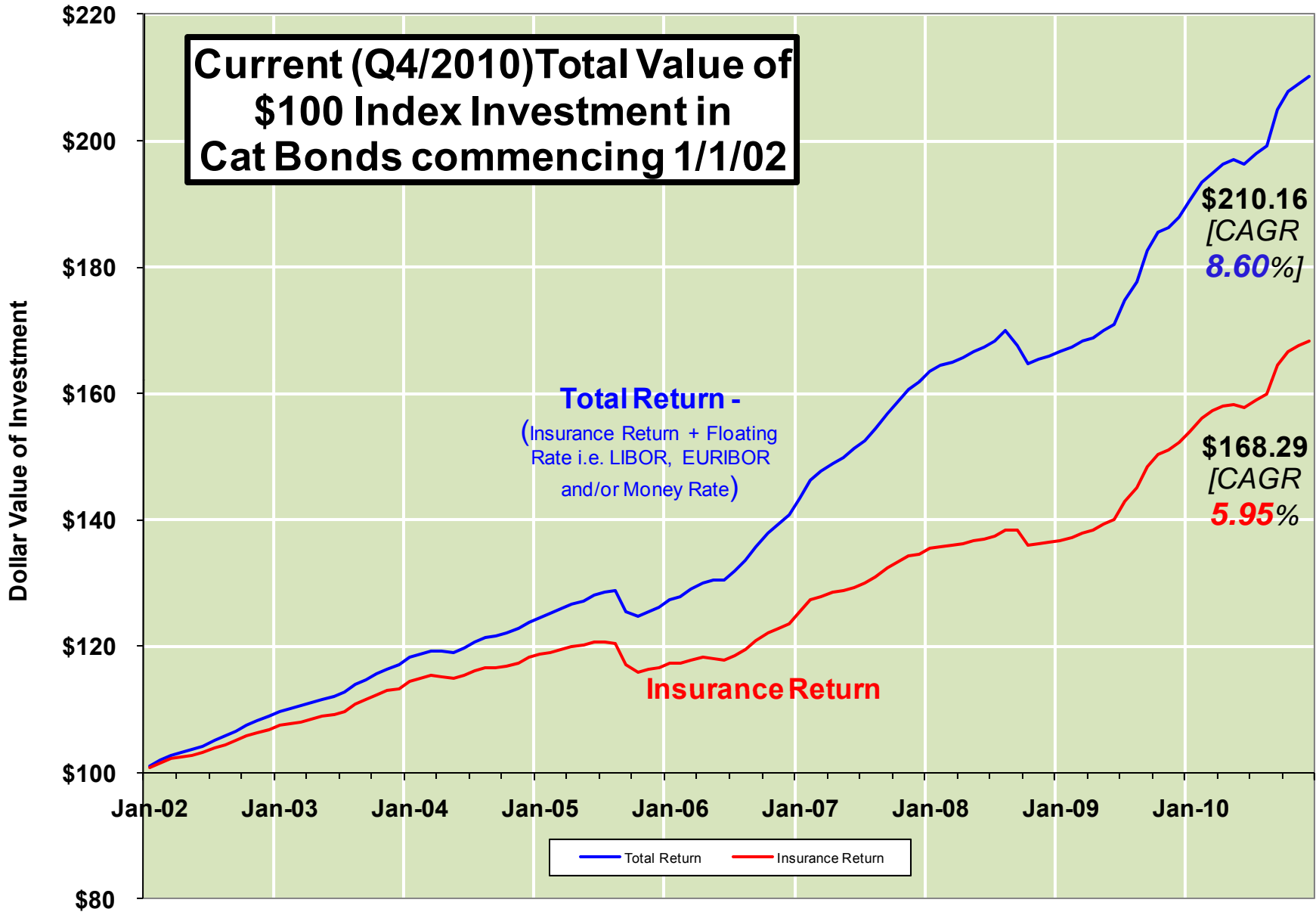
1998 to Q1/2011
Aggregate Issue Amount



Investor Attraction

Calendar Annual Returns, ALL Cat				
<u>Year</u>	<u>Total</u>	<u>Insurance</u>	<u>Floating</u>	<u>Price</u>
2002	8.91%	6.86%	1.93%	1.23%
2003	7.41%	6.09%	1.25%	0.83%
2004	5.82%	4.26%	1.50%	-0.59%
2005	1.84%	-1.44%	3.31%	-6.22%
2006	11.69%	6.13%	5.27%	-0.68%
2007	14.86%	8.91%	5.50%	1.80%
2008	2.65%	1.28%	1.35%	-6.78%
2009	13.22%	11.65%	1.43%	4.45%
2010	11.81%	10.51%	1.18%	3.26%
<i>Annual Average</i>	8.69%	6.03%	2.53%	-0.30%
<i>Std Dev</i>	4.62%	4.21%	1.75%	3.88%

**Current (Q4/2010) Total Value of
\$100 Index Investment in
Cat Bonds commencing 1/1/02**



Basics of Cat Bonds and Overview of some Trends

Perils
Maturity
Ratings
Shelf Registrations
Indemnity

Basic Definition of Securitization

The term insurance securitization is taken to mean any instrument that transfers risk from the insurance and reinsurance market to investors in the capital markets.

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The purest form of insurance-linked security [**ILS**] is popularly known as a **Cat Bond**. It transfers catastrophe risk from insurers to investors. Typically the investor is provided with **probabilities** of loss from such catastrophes together with a spread over LIBOR.

More generally the term ILS can refer to risk transfers with similar characteristics and this might include **Sidecars** and **ILWs**.

While most of the initial securitizations have been done with catastrophe risk increasing amounts are being done in Mortality, Auto, Excess Liability, and several attempts at Longevity.

There have also been several attempts by official institutions –The World Bank and the International Monetary Fund to extend the concept to developing or less developed countries – e.g. the Caribbean Country Risk Insurance Facility, Mexico Multi-Cat.

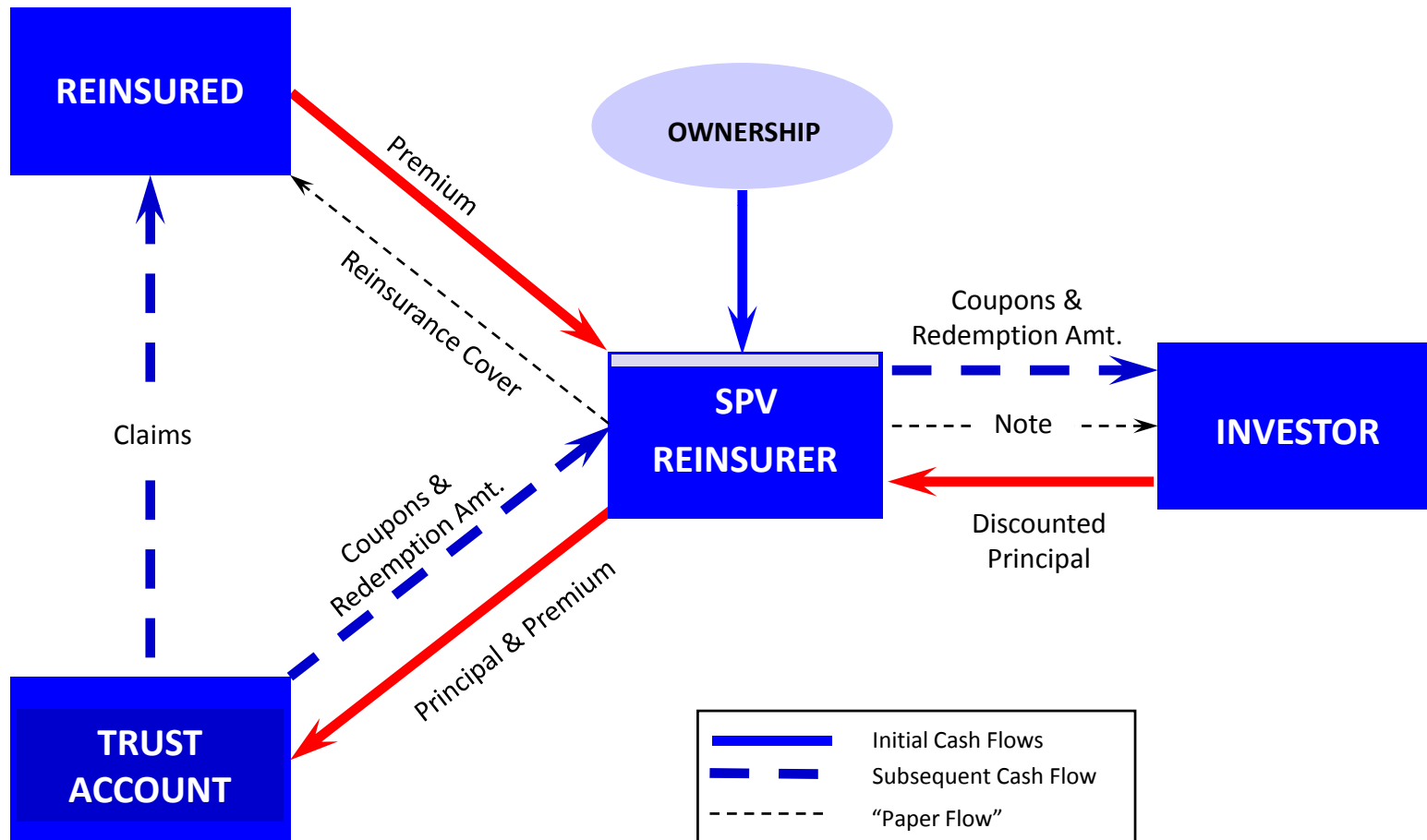
There are several other related types of securitization Triple XXX Embedded Value, and Life Settlements not discussed here.

History

- **First proposal 1992 AIG Merrill Lynch**
- **Experiments 1995-1996 Reliance, Hannover, St Paul**
- **First Large deal USAA \$500 million 1997, Now \$4 bn Shelf**
- **Persistent Issuance about \$ 1.0+ billion per year, Now \$5 to \$7 per year**
- **Mostly Catastrophe Risk, but increasingly other lines**

How it Works

TYPICAL SECURITISATION STRUCTURE



How it Works

- Often an interest rate swap is added to structure to stabilize spread received and accommodate cash flow
- Note that “ownership” used to be quite an issue. On whose books if any, should the SPR be consolidated
- Originally ignored, then conservative accounting put it at 3% because that is what other Asset Backed Securities structures required. Not so much an issue these days
- Guernsey, Barbados, Bermuda, Cayman Islands all used
Must be *flexible* and *tax neutral*. Timing.

Advantages Of Securitization

To Cedents:

- ◆ Access to more capital providers
- ◆ Greater security, no credit risk or reinsurance recoverables issues
- ◆ Substitutes “designer” capital for permanent general capital. Improves RoE.

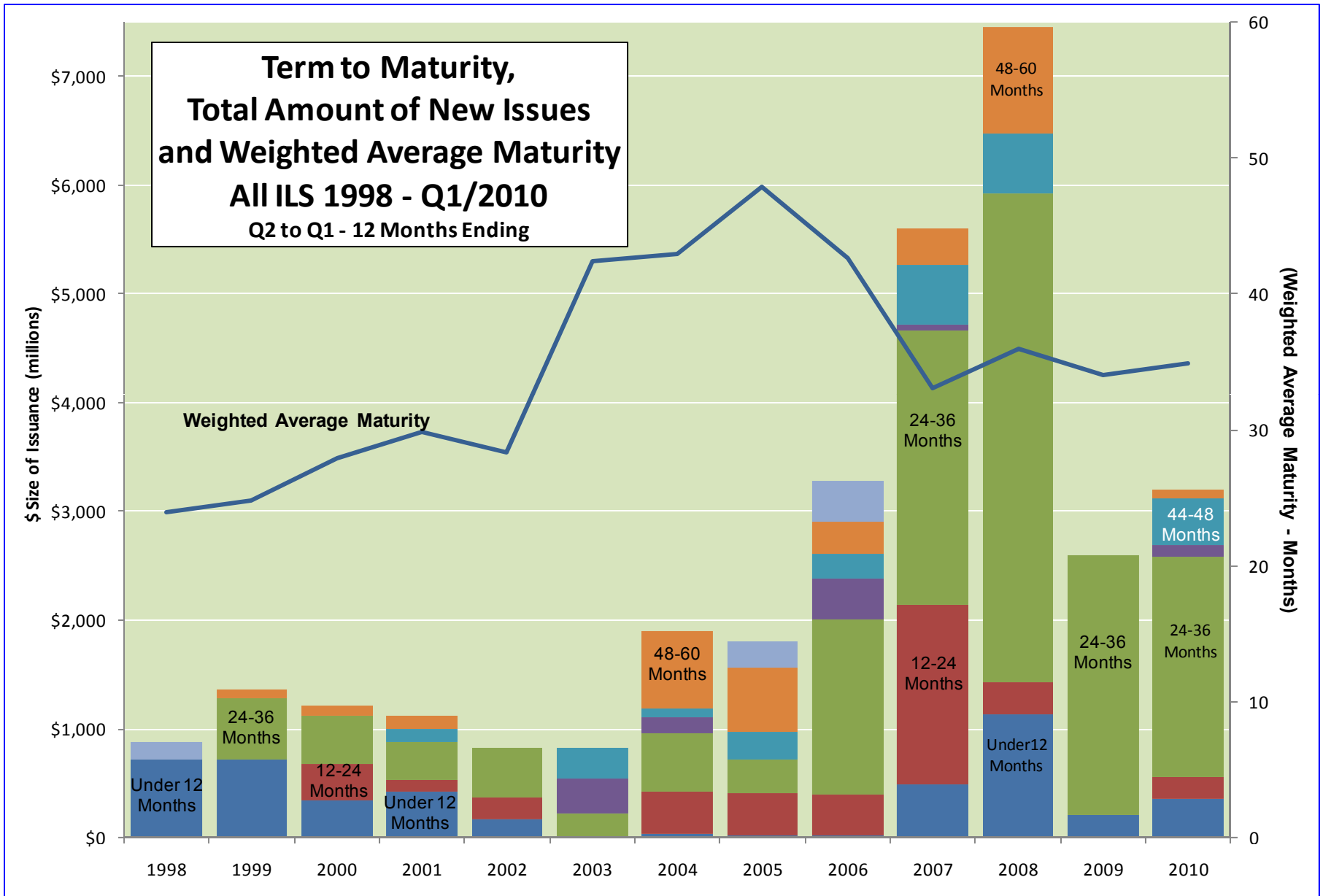
To Investors:

- ◆ High Excess returns
- ◆ Diversification, non-correlated asset
- ◆ Direct investment in risk, not management, market multiples nor investment philosophy.

An ILS Security's Structural Decisions

- **Term of the risk. Mostly annual initially. Should depend on cycle. Multi-period Exposure, Term of 'development' period**
- **Amount, Limit, Currency, Investment Banker/Placement Agent Underwriter? Book Runner/Lead**
- **Other service providers; Risk Modeler AIR, EQEcat, RMS Rating agency (s) Moody's, Standard and Poor's, Fitch.**
- **Fiscal Agent, Administrator, Indenture Trustee, Reinsurance Trustee, Reinsurance Trust, Investment manager, Claims Reviewer, Attorney, Agent, Accountant**

Security Structural Decisions - Term

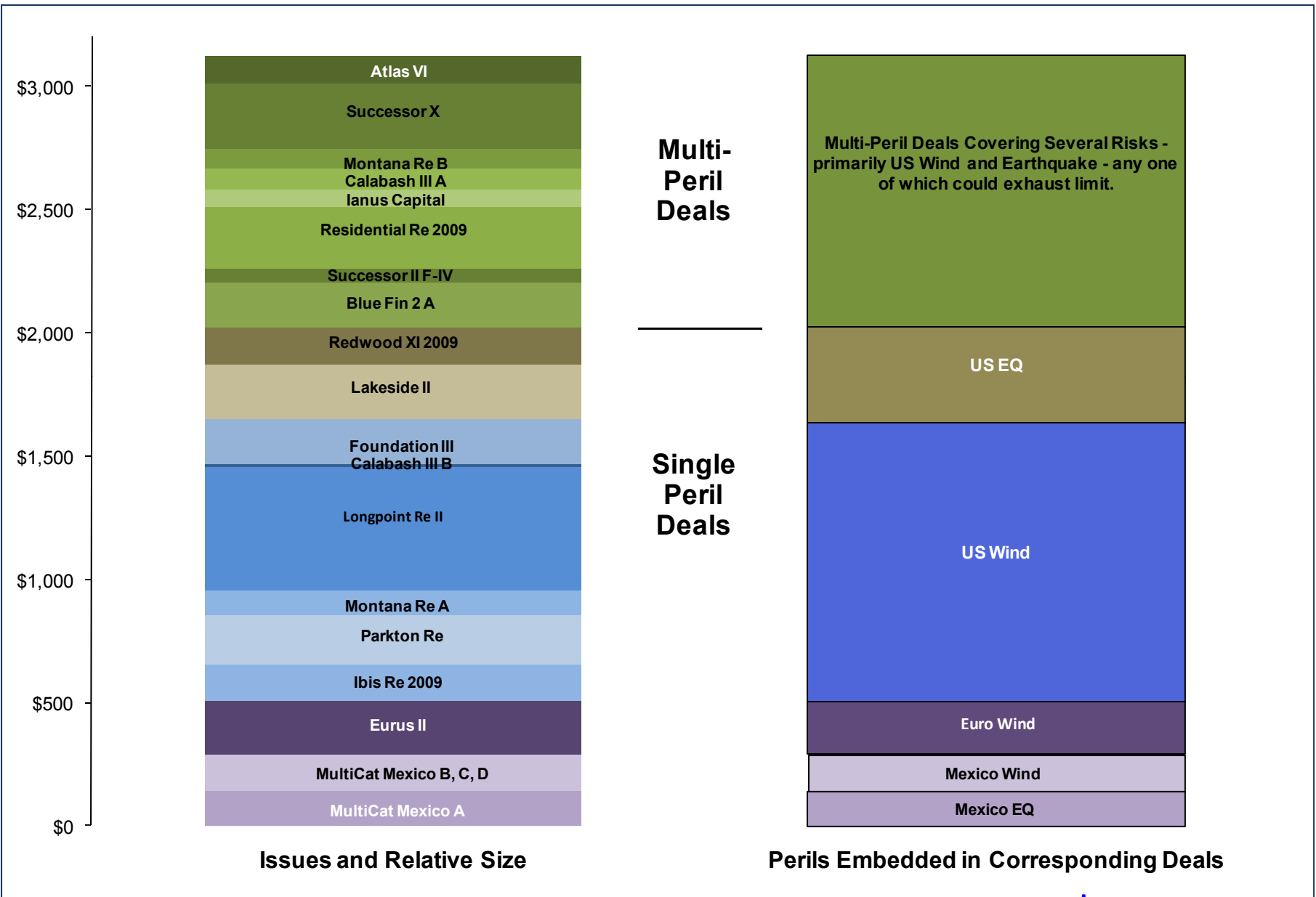


Cost Saving through Maturity Extension – multiyear deals

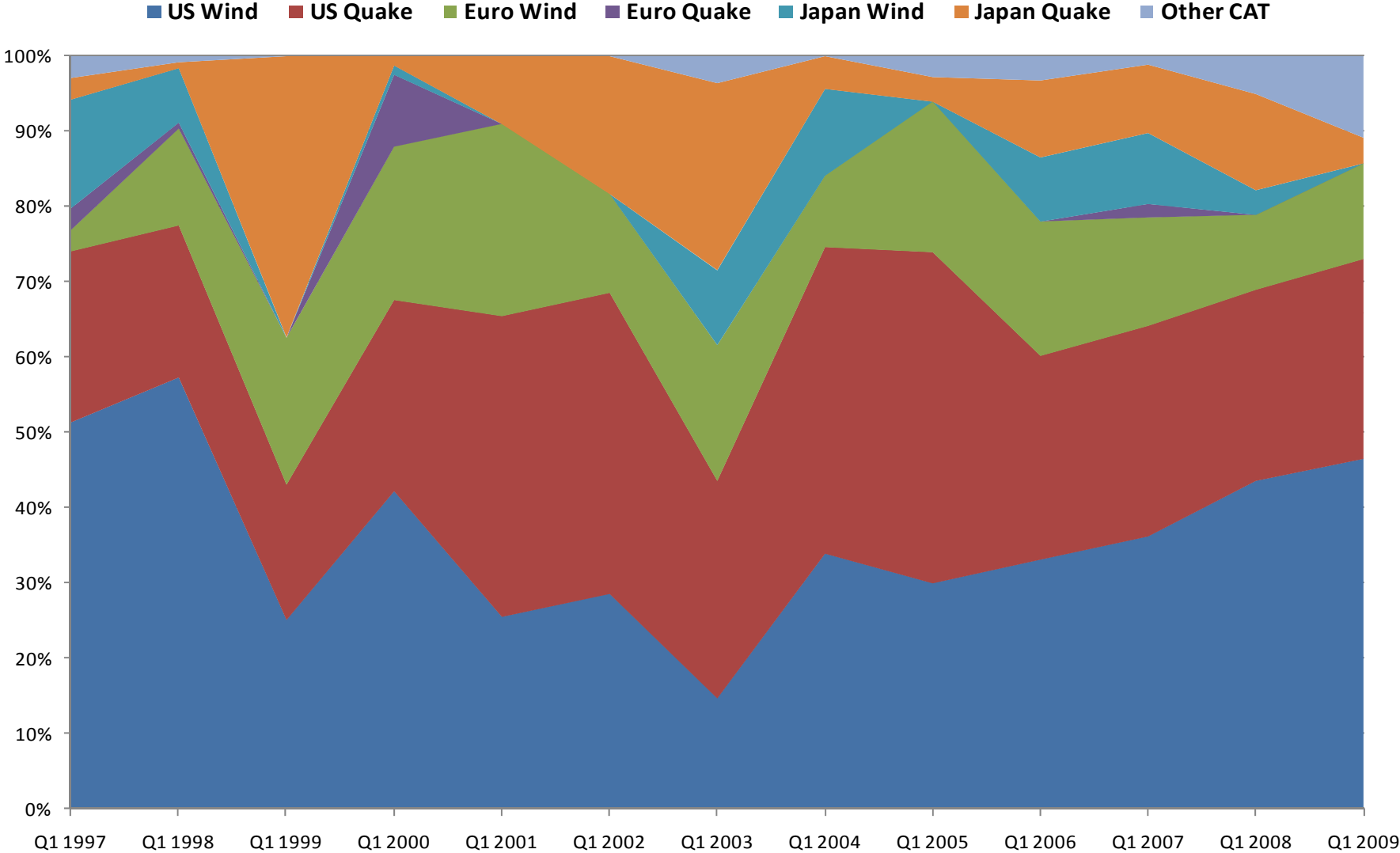
An ILS Security's Structural Decisions

- **Perils to be covered, Catastrophe Wind and Quake in US, Europe and Japan**
- **Other Perils; Weather, Auto Residual Value, Space, Aviation, Life, Longevity, Excess Liability**
- **Single, Multiple, Joint, Contingent.**
 - Single – one risk one region.**
 - Multiple – Portfolio of singles risks (leveraged)**
 - Joint – several perils, each of which can exhaust limit**
 - Contingent – must fulfill another contingency before being on risk**
- **Occurrences; Single event, Multiple events, Aggregate**

2010



Share of Exposure by Potential Limits All Cat ILS 1997 – Q1 2011



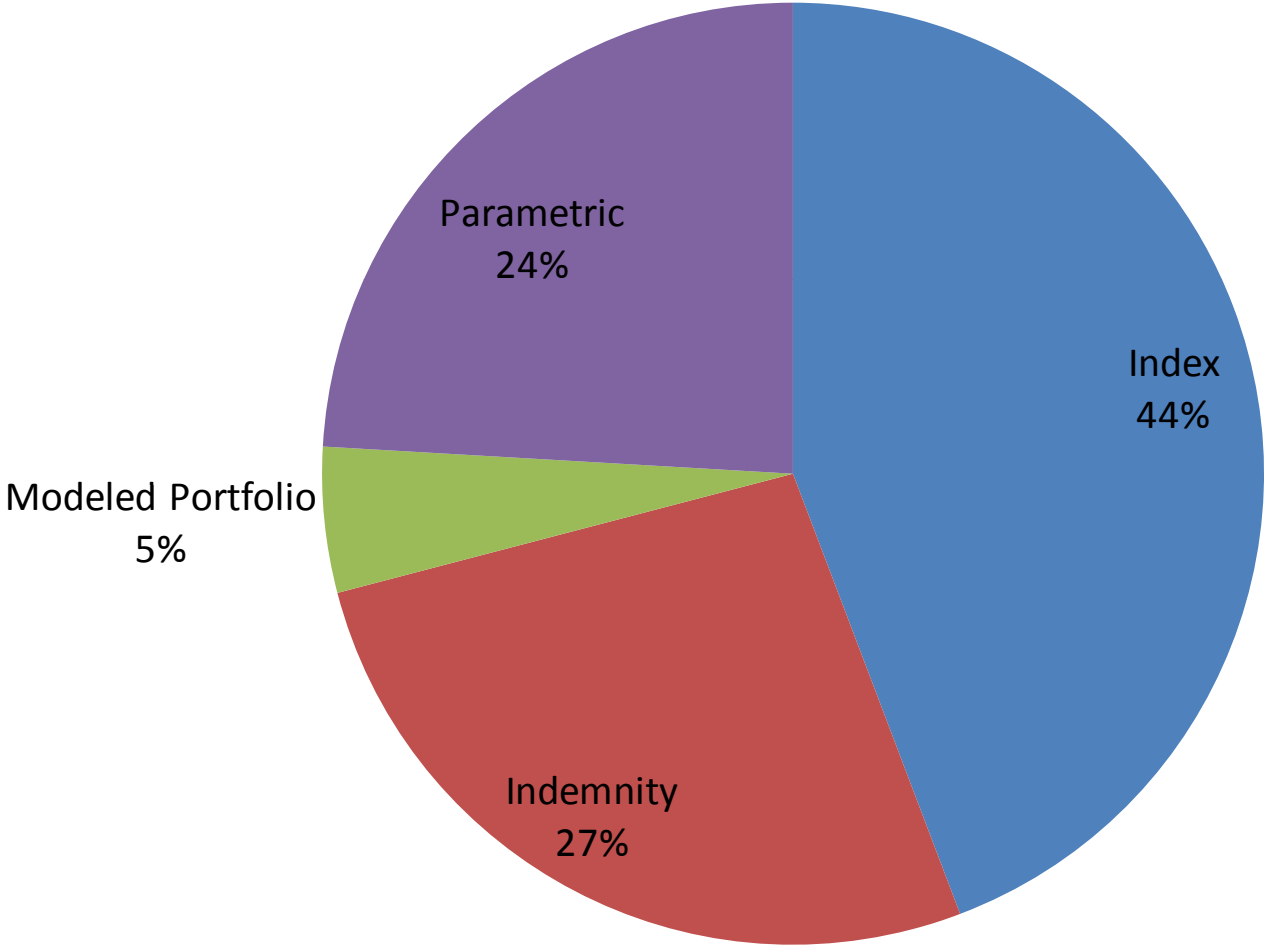
An ILS Security's Structural Decisions

- Denominating the Loss measure
- Indemnity Loss – Replacing the exact loss of the cedent
Moral hazard issue, revealing the book, changing the book, co-insurance. Alignment of interest essential. Exit Prices.

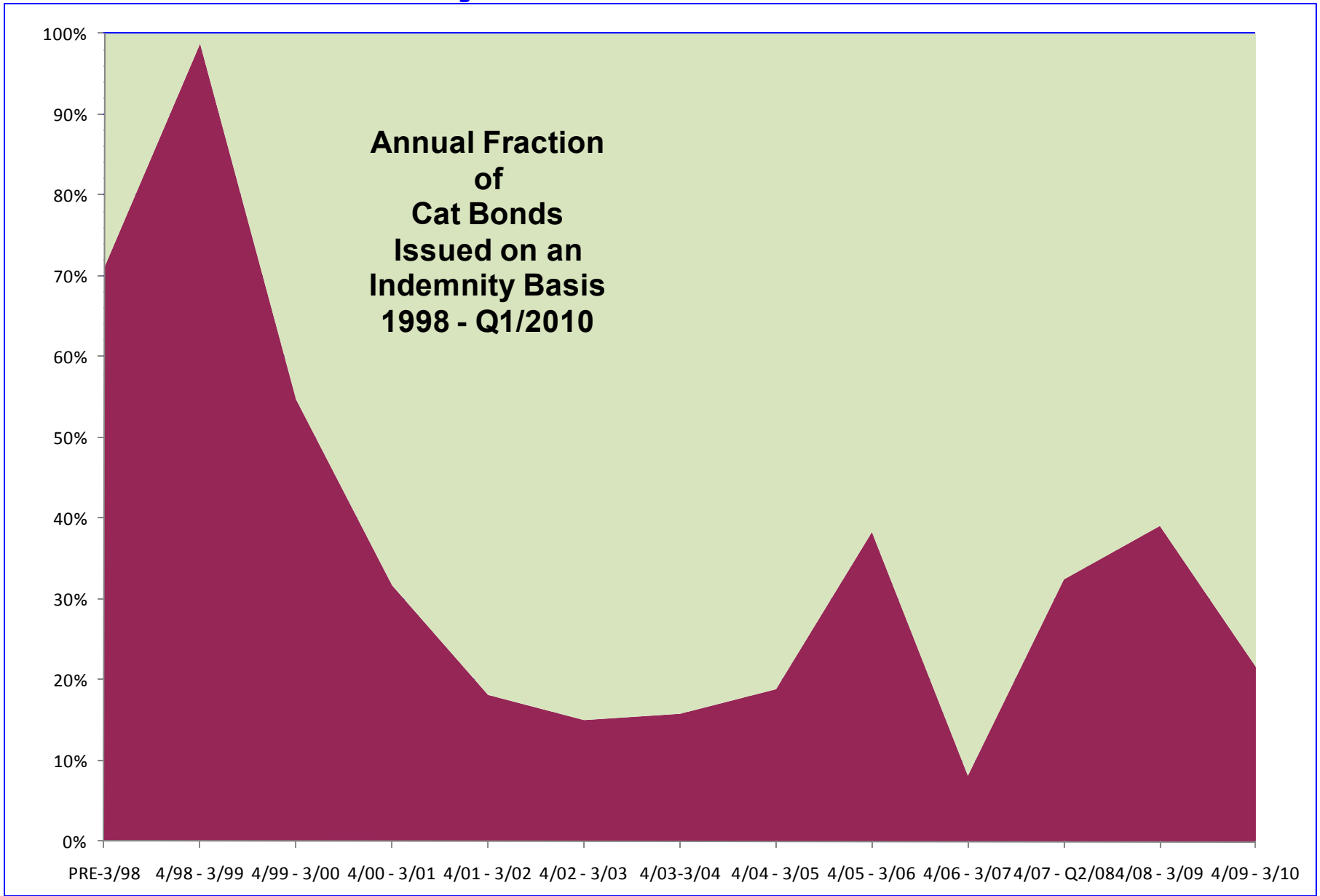
Basis risk with any approximate loss replacement.

- Index Loss – Usually Industry loss, in US Property Claims Service (PCS), Industry Services Office (ISO) NatCat SERVICE (Munich Re), Sigma (Swiss Re), Perils.
- Modeled Loss – Various. Stored and run after event or risk period based on event parameters.
- Parametric Measure – Geo Physical, Richter Scale for Region Japanese Meteorological, Wind Speed
- Hybrids

Loss Basis - All Cat ILS 1997- Q1 2008



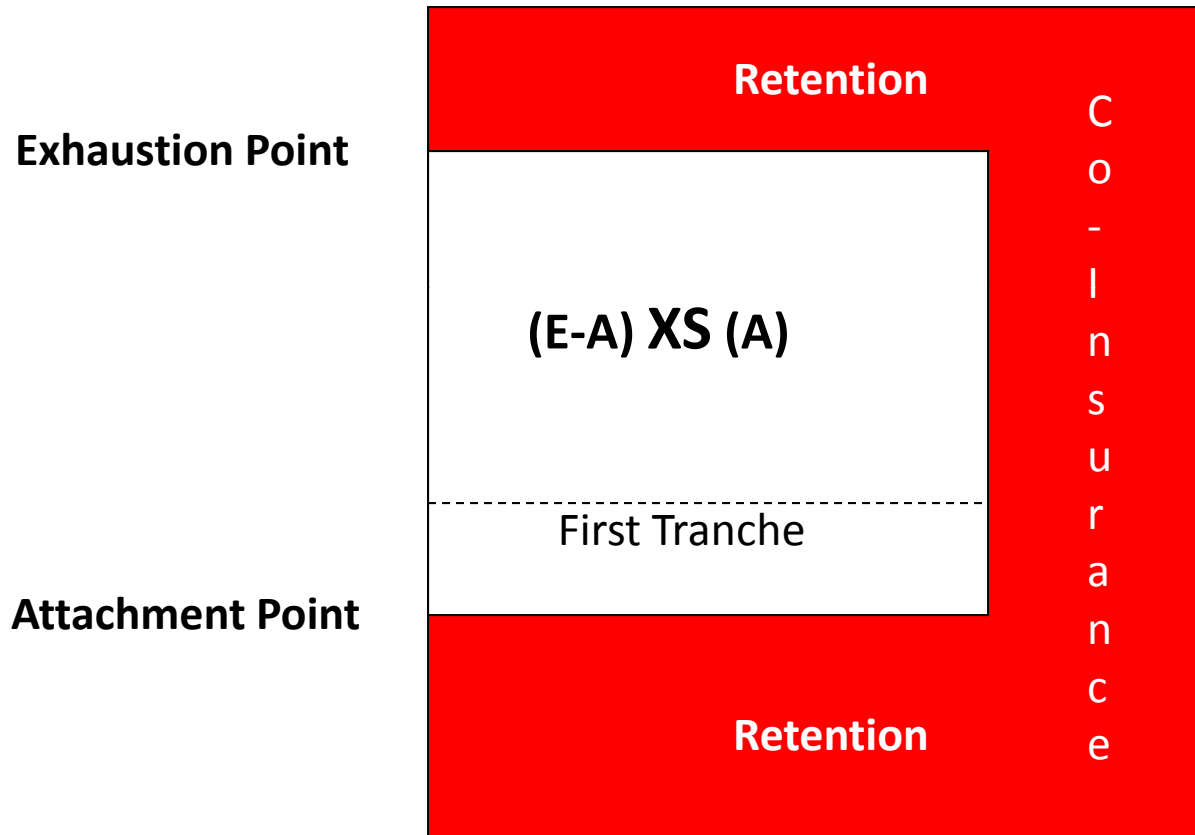
An ILS Security's Structural Decisions



An ILS Security's Structural Decisions

- **Tranching; Single or Multiple**
- **First Loss Position as Equity, Non consolidation considerations.**
- **Horizontal Tranches, how many and why, ratings thereof and price thereof?**
- **Vertical Co-Insurance**
- **Non adjacent tranches**

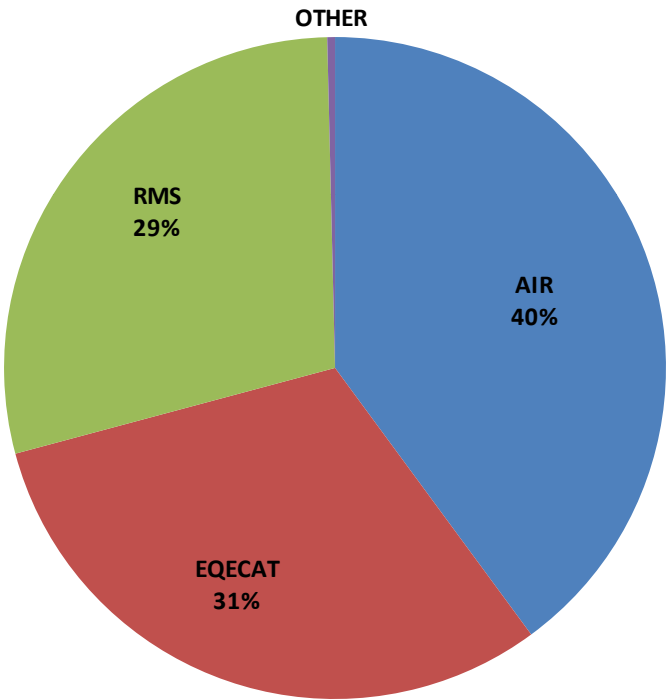
An ILS Security's Structural Decisions



Security Structural Decisions

- **Risk analysis**
- **Applied Insurance Research (AIR) Boston 1987**
- **EQEcat Earthquake origins, Oakland, California**
- **Risk Management Solutions (RMS) Newark, California, Stanford Origins 1988**

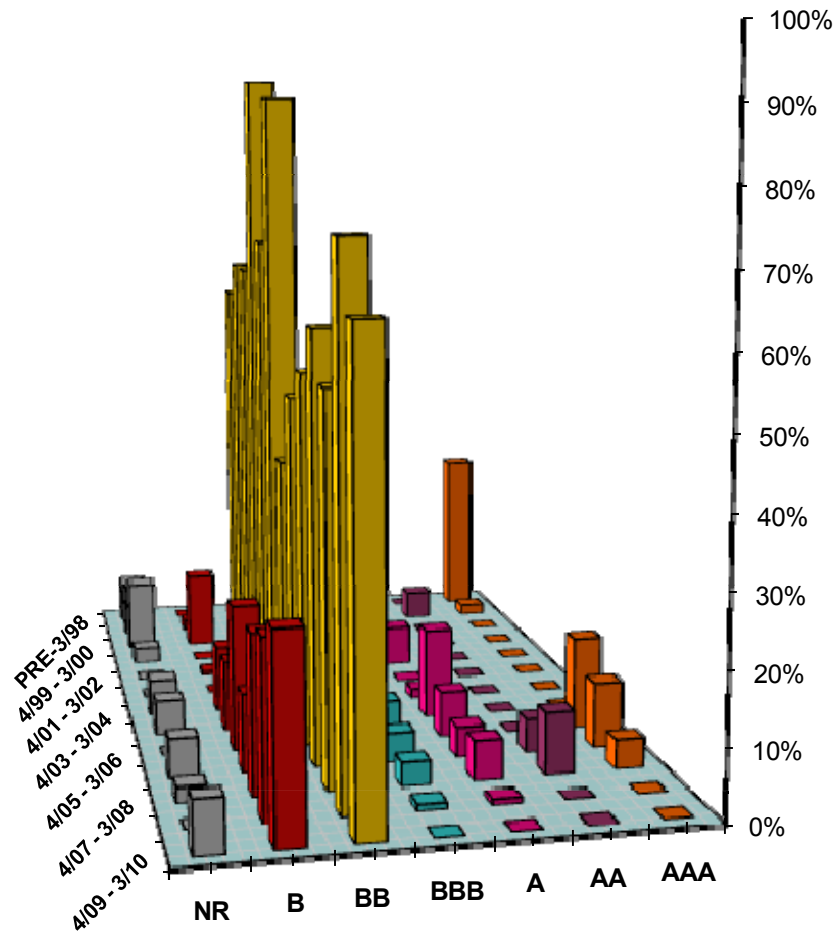
**Modeling Companies
All CAT ILS 1997 - Q1 2011**



An ILS Security's Structural Decisions

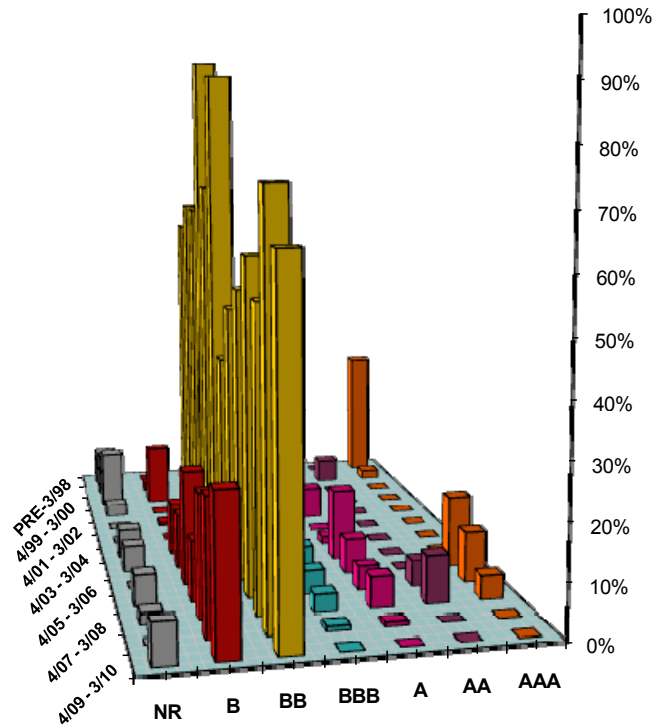
- **Ratings Agencies Issuer Financed**
- **Moody's; Alpha Numeric code Relies on Expected Loss – Ba3**
- **Standard and Poors; Letter Rating- main focus will be Probability of Default. - AA+**
- **Fitch-IBCA; Letter Rating, Mix of Expected loss, Probability of Loss and Probability of Exhaustion.- B+**
- **No Buyer Financed Rating Agency so far utilized e.g. Egan-Jones Rating.**

Fraction of Issuance in each Credit Rating 1998 - Q1/2010

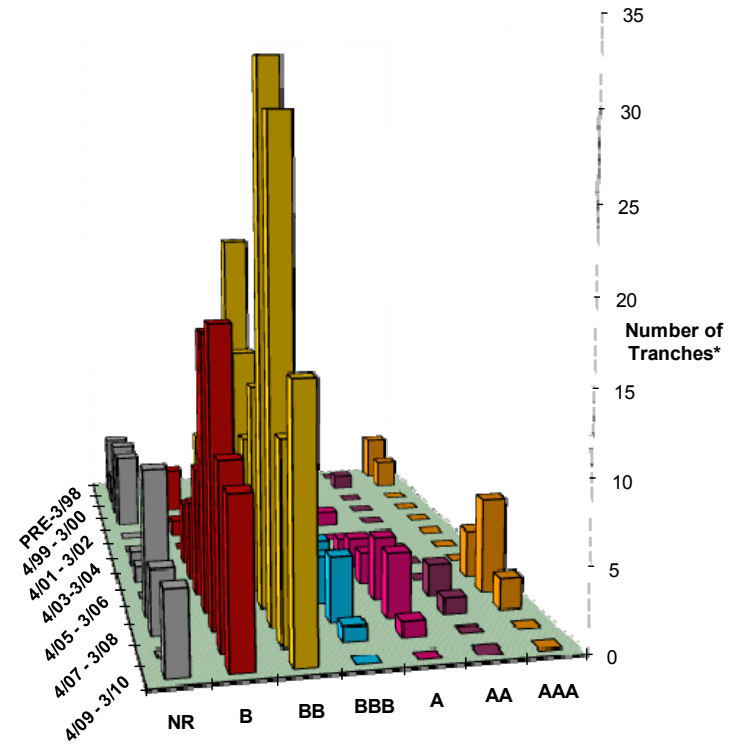


An ILS Security's Structural Decisions

Fraction of Issuance in each Credit Rating
1998 - Q1/2010



RATINGS OVER TIME
(by Number of Rated Tranches)
1998 - Q1/2010



*Each issue of a various program transactions is considered to be a separate tranche for this graph.

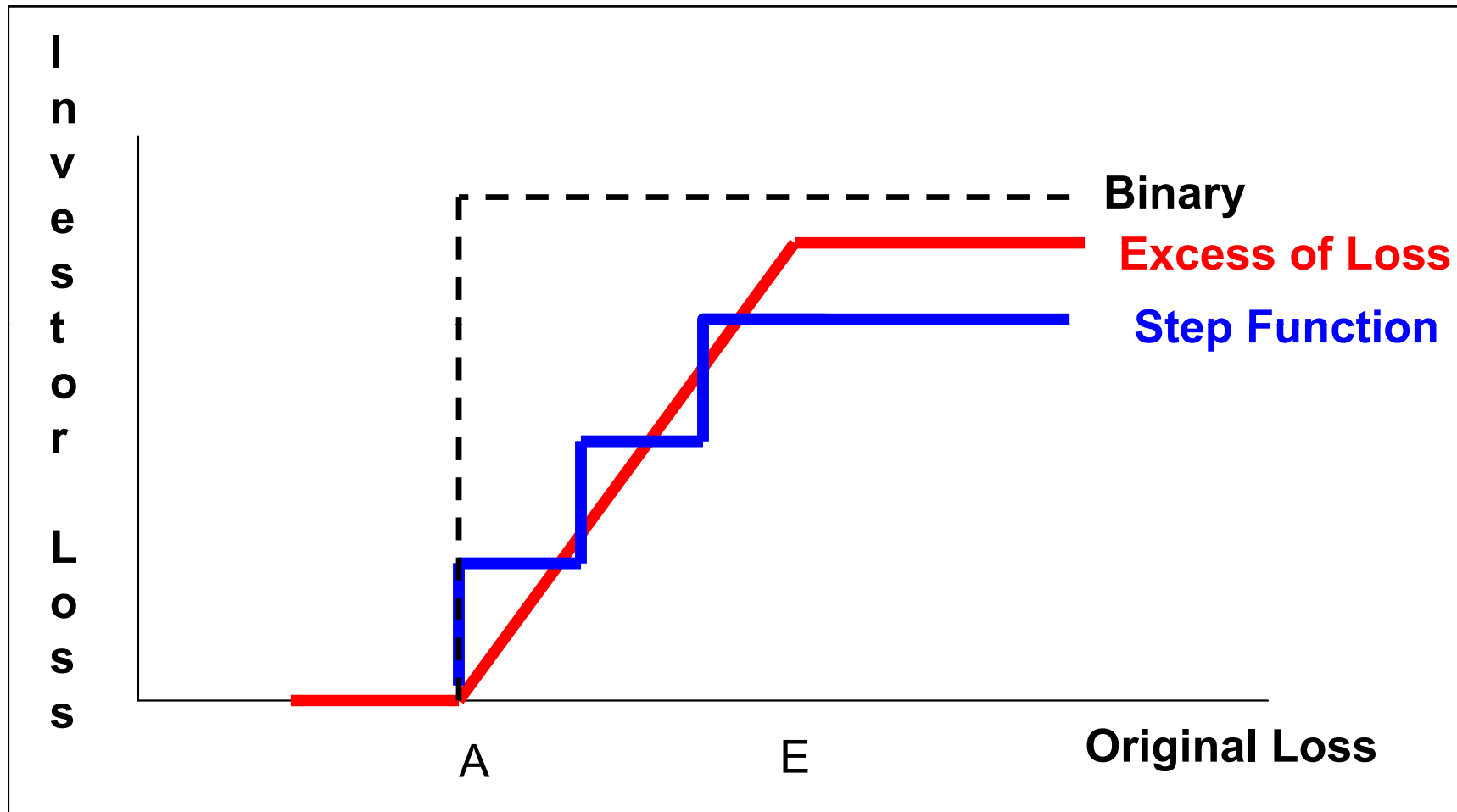
An ILS Security's Structural Decisions

- **Optionality** - Other Structural Choices
- **Embedded Options** - Extensions of term
 - Drop Downs
 - Callable
 - Puttable
- **Explicit Options** - Contingent upon Event Occurrence
 - Mandatory
- **Implicit Options** - Deductibles

An ILS Security's Structural Decisions

- **Payout Formulas**
- **Proportionate as in Excess of Loss, or Conventional Option**
- **Binary – Full Payout upon Trigger**
- **Step Function**

Security Structural Decisions



An ILS Security's Structural Decisions

Cost of Issuance

Estimated Cost of Typical Insurance-Linked Security

Note: There can be considerable variation in cost depending on the structure, peril, trigger complexity and other business factors. Figures in \$000's.

• Structuring/Investment Banking	\$400 - \$800,	one time
• Risk Modeling	\$200 - \$400,	one time
• Legal	\$300 - \$600,	one time
• Rating Agency	<u>\$ 50 - \$150,</u> [\$ 950 - \$1950]	one time
• Accounting/Audit	\$10 - \$20	per year
• Administration	\$15 - \$25	per year

Estimated Cost of Typical Insurance-Linked Security

Note: There can be considerable variation in cost depending on the structure, peril, trigger complexity and other business factors. Figures in \$000's.

- Loosely, for a \$100 million issue total cost might be [\$1 million - \$2 million]
- i.e. [100 – 200] basis points
- If the term is 3 years, that is an annual equivalent of [30 – 60] basis points
- Traditional annual brokerage on coverage with an [8% -12%] premium at 5% would be [40 – 60] basis points
- Clearly costs are comparable
- ILS issuance costs will tend to be lower when a) term is long and b) premium is high

CASE STUDY I - USAA

- Flexibility in the original issue market

USAA - A user of indemnity bonds

- 14 year Program**
- Shows flexibility**
- Cost minimization**
- Smoothing**

Residential Re Issues - 1997 to 2006

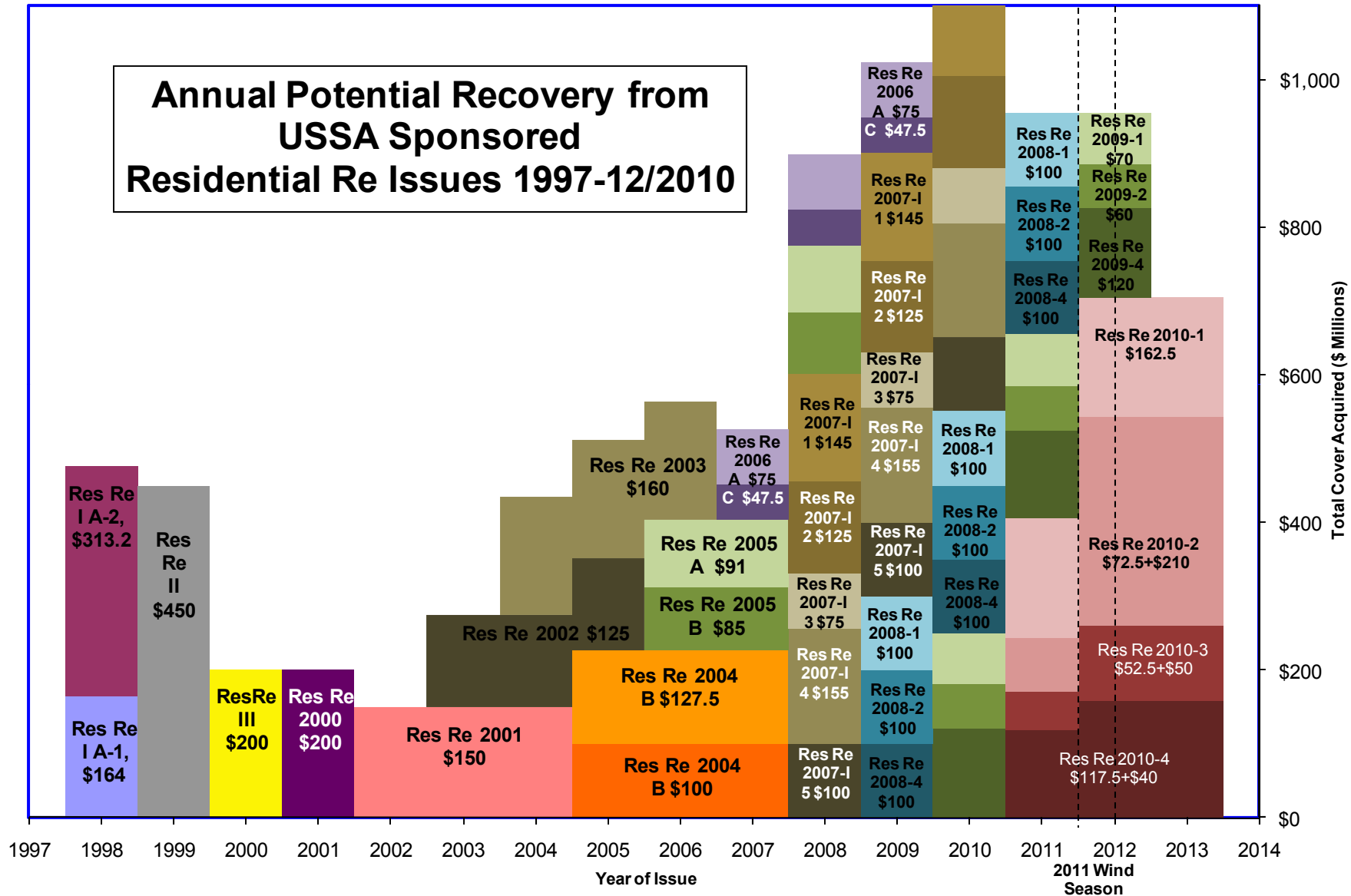
Issue	Amount (US \$Mil)	S&P Rating	Issue Date	Maturity	Spread Premium to LIBOR (bps)	Expected Loss (Annual)
Residential Re I Class A-1	163.8	AA,A+	Jun-97	Jun-98	250	0.00%
Residential Re I Class A-2	313.2	BB	Jun-97	Jun-98	576	0.63%
Residential Re II	450.0		Jun-98	Jun-99	416	0.58%
Residential Re III	200.0	BB	Jun-99	Jun-00	366	0.44%
Residential Re 2000 Ltd.	200.0	BB+	May-00	Jun-01	410	0.54%
Residential Re 2001 Ltd.	150.0	BB+	May-01	Jun-04	499	0.68%
Residential Re 2002 Ltd.	125.0	BB+	May-02	Jun-05	490	0.67%
Residential Re 2003 Ltd.	160.0	BB+	May-03	Jun-06	495	0.48%
Residential Re 2004 A	127.5	BB	May-04	Jun-07	595	1.21%
Residential Re 2004 B	100.0	B	May-04	Jun-07	950	3.16%
Residential Re 2005 A	91.0	BB	May-05	Jun-08	545	1.43%
Residential Re 2005 B	85.0	B	May-05	Jun-08	845	3.41%
Residential Re 2006 A	47.5	B	Jun-06	Jun-09	1000	1.93%
Residential Re 2006 B	0.0	B				
Residential Re 2006 C	75.0	BB+	Jun-06	Jun-09	750	0.49%
Residential Re 2006 D	0.0	BB				

Residential Re 2007-I 1	Goldman Sachs BNP Paribas Lehman Bros.	145.0	BB
Residential Re 2007-I 2	Goldman Sachs BNP Paribas Lehman Bros.	125.0	B
Residential Re 2007-I 3	Goldman Sachs BNP Paribas Lehman Bros.	75.0	B
Residential Re 2007-I 4	Goldman Sachs BNP Paribas Lehman Bros.	155.0	BB+
Residential Re 2007-I 5	Goldman Sachs BNP Paribas Lehman Bros.	100.0	BB+
Residential Re 2008-1	Goldman Sachs Lehman Bros.	100.0	BB
Residential Re 2008-2	Goldman Sachs Lehman Bros.	100.0	B
Residential Re 2008-4	Goldman Sachs Lehman Bros. Goldman Sachs	100.0	BB+
Residential Re 2009-1	AON Benfield Securities BNP Paribas Goldman Sachs	70.0	BB-
Residential Re 2009-2	AON Benfield Securities BNP Paribas Goldman Sachs	60.0	B-
Residential Re 2009-4	AON Benfield Securities BNP Paribas	120.0	BB-

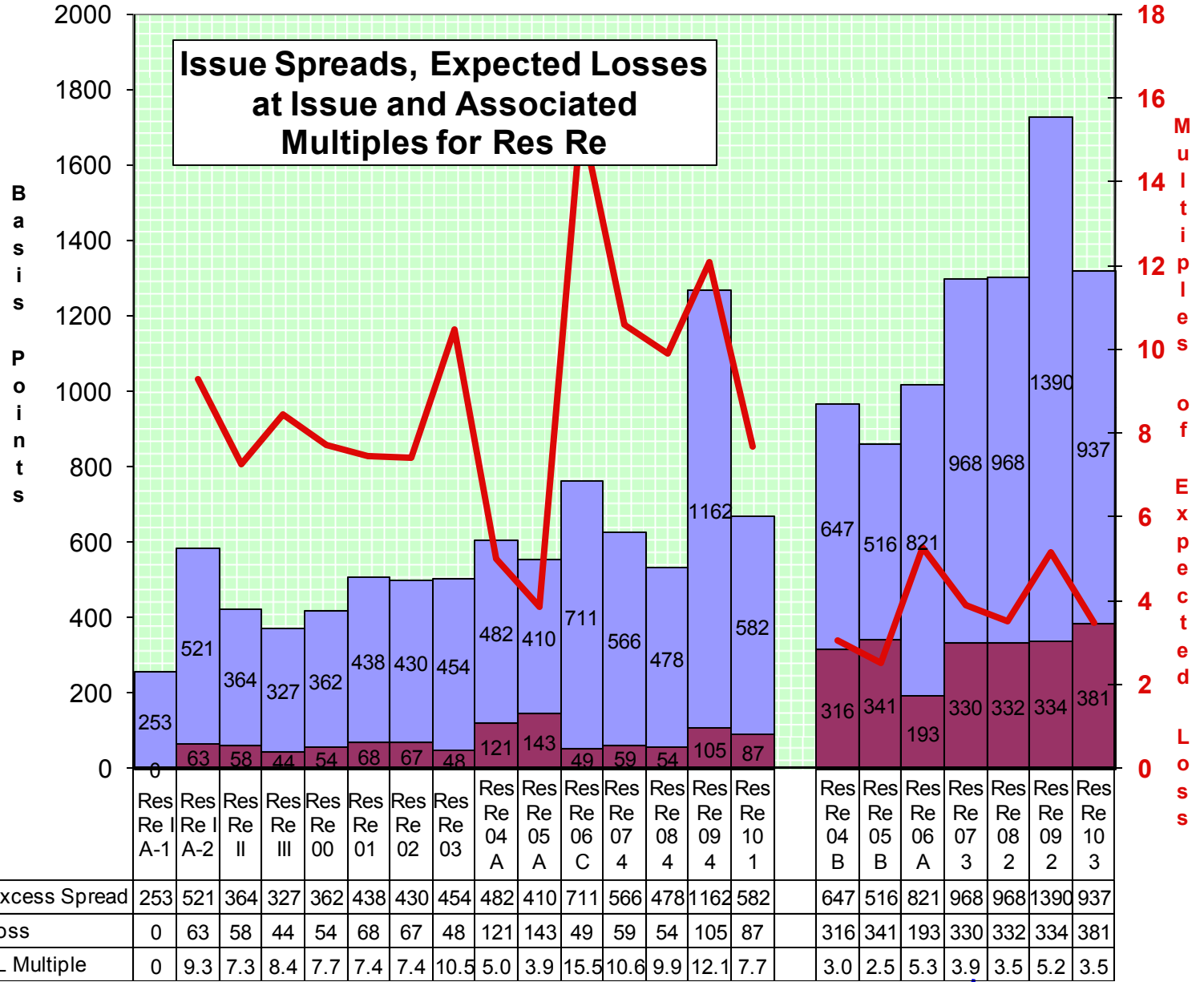
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Residential Re 2006 B	0.0	B				
Residential Re 2006 C	75.0	BB+	Jun-06	Jun-09	750	0.49%
Residential Re 2006 D	0.0	BB				

Residential Re Issues - 2010			
Issue	Lead Underwriters	Amount (US \$Mil)	S&P Rating
Residential Re 2010-1	AON Benfield Securities Deutsche Bank Securities Goldman Sachs	162.5	BB
Residential Re 2010-2	AON Benfield Securities Deutsche Bank Securities Goldman Sachs	72.5	B+
Residential Re 2010-3	AON Benfield Securities Deutsche Bank Securities Goldman Sachs	52.5	B-
Residential Re 2010-4	AON Benfield Securities Deutsche Bank Securities Goldman Sachs	117.5	NR
Residential Re 2010 II-2	AON Benfield Securities Deutsche Bank Securities Goldman Sachs	210.0	BB
Residential Re 2010 II-3	AON Benfield Securities Deutsche Bank Securities Goldman Sachs	50.0	NR
Residential Re 2010 II-4	AON Benfield Securities Deutsche Bank Securities Goldman Sachs	40.0	NR

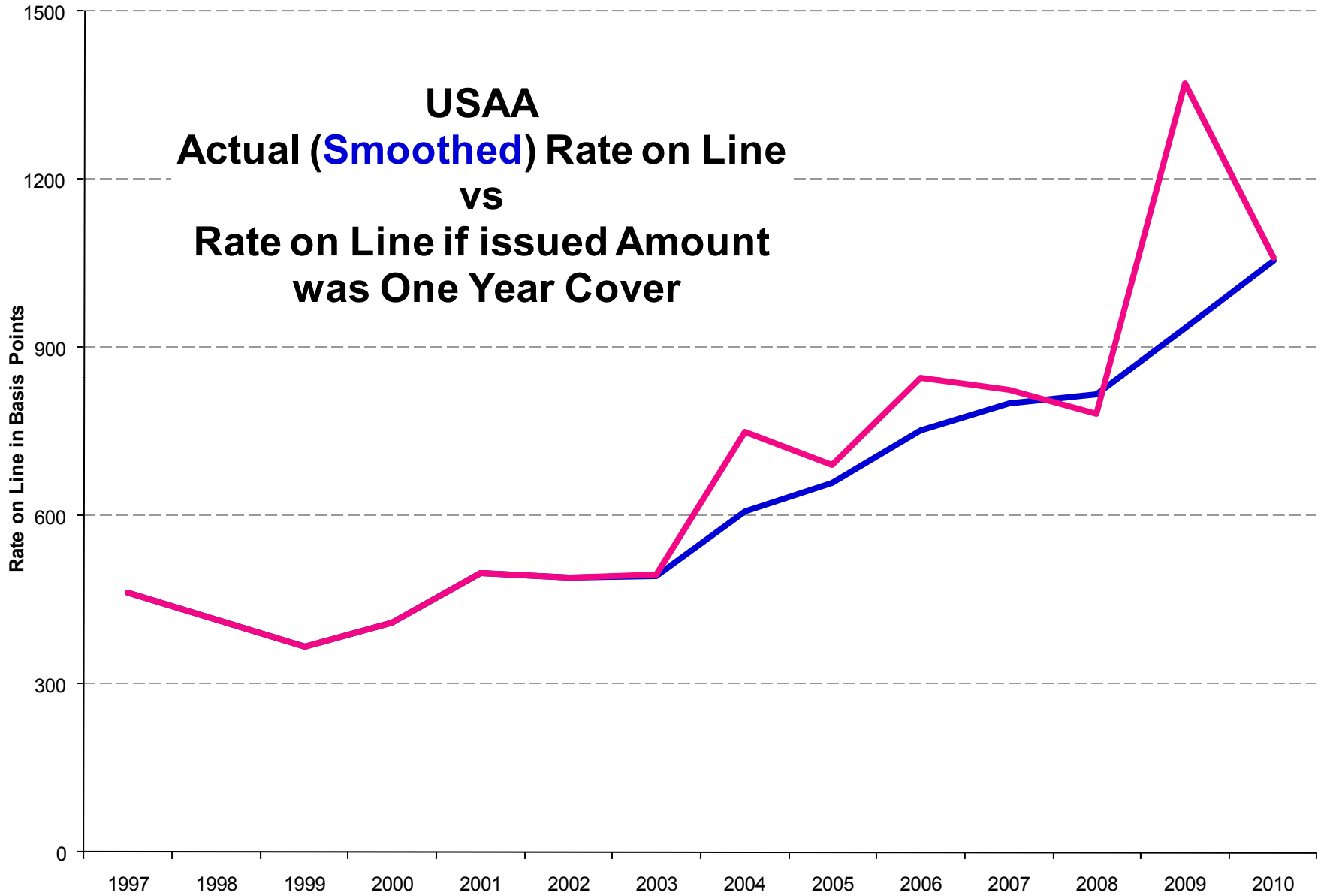
Annual Potential Recovery from USSA Sponsored Residential Re Issues 1997-12/2010



Issue Year	Capital Guaranty Cat 3 +21Gulf	Category 3 21 Gulf States	21 Gulf + Hawaii	3 year Term	US Wind + Quake	Multiple Tranches	Occurrence and Aggregate Offerings
1997	✓	✓					
1998-2001		✓		✓			
2002			✓	✓			
2003				✓	✓	✓	
2004-5				✓	✓	✓	
2006-7				✓	✓	✓✓	✓

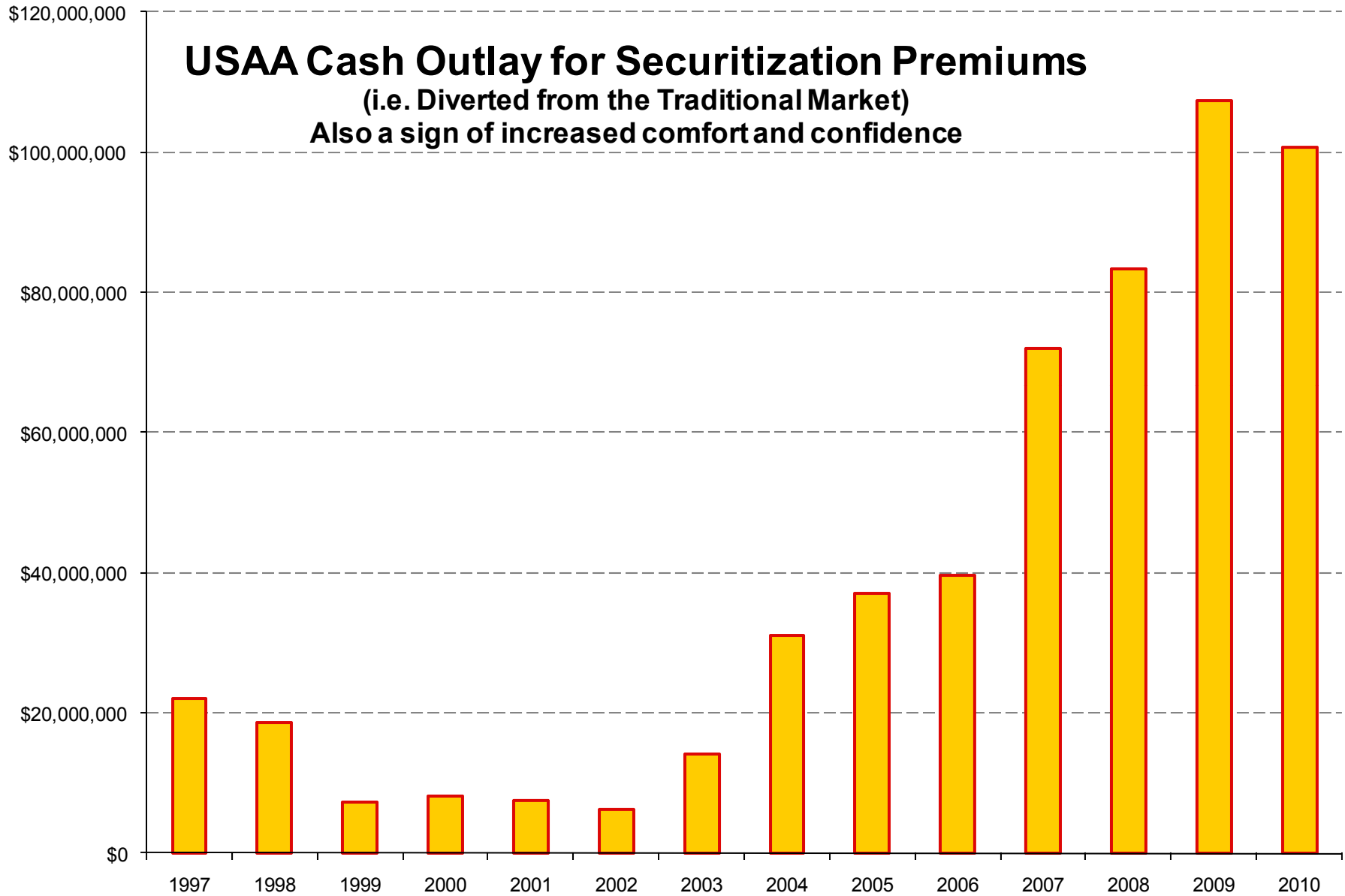


USAA
Actual (Smoothed) Rate on Line
vs
Rate on Line if issued Amount
was One Year Cover



USAA Cash Outlay for Securitization Premiums

(i.e. Diverted from the Traditional Market)
Also a sign of increased comfort and confidence



CASE STUDY II - MEXICO

- **Using the ILS Secondary Market to inform original issue pricing**

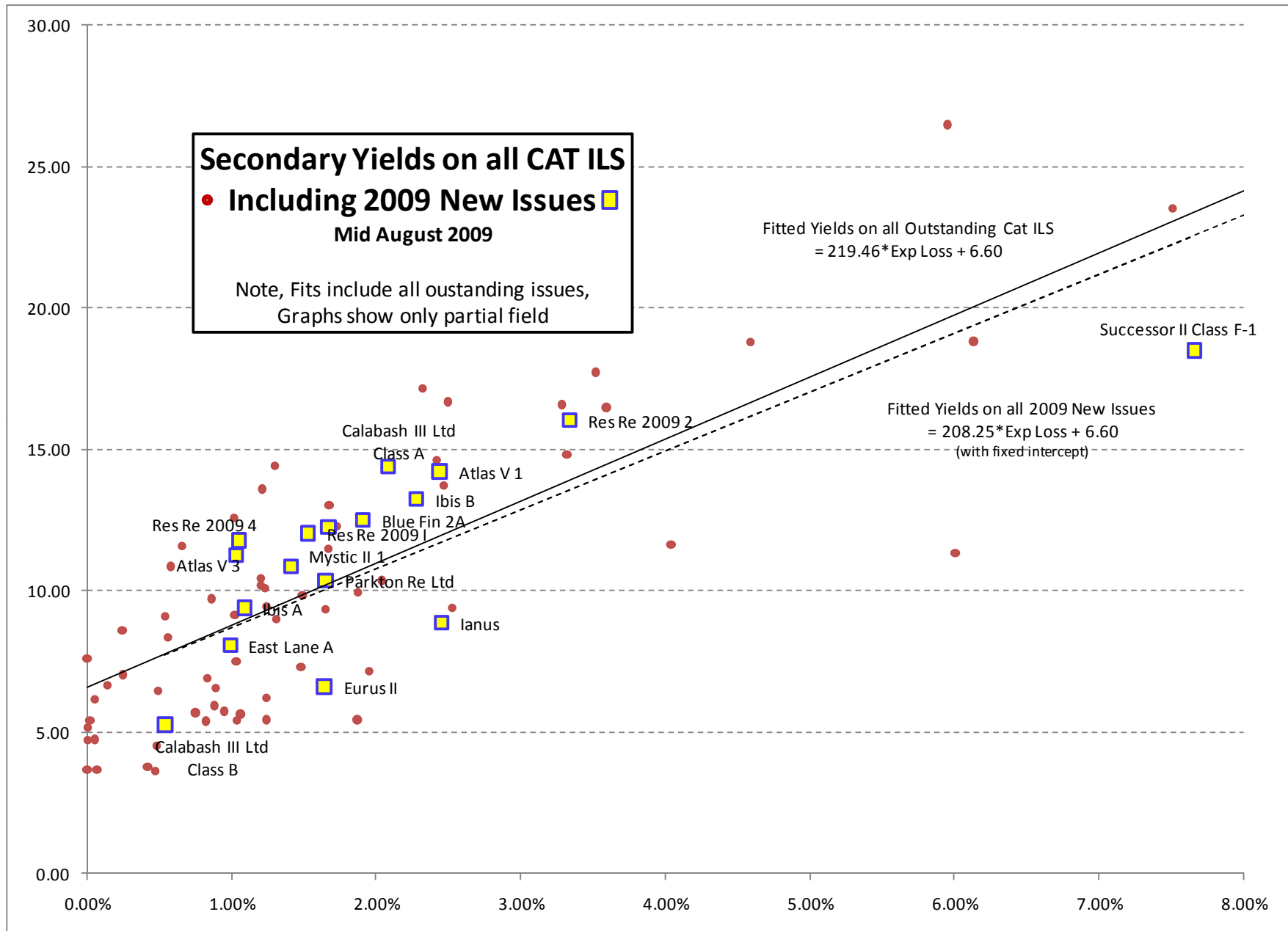
Multi-Cat Mexico September 2009

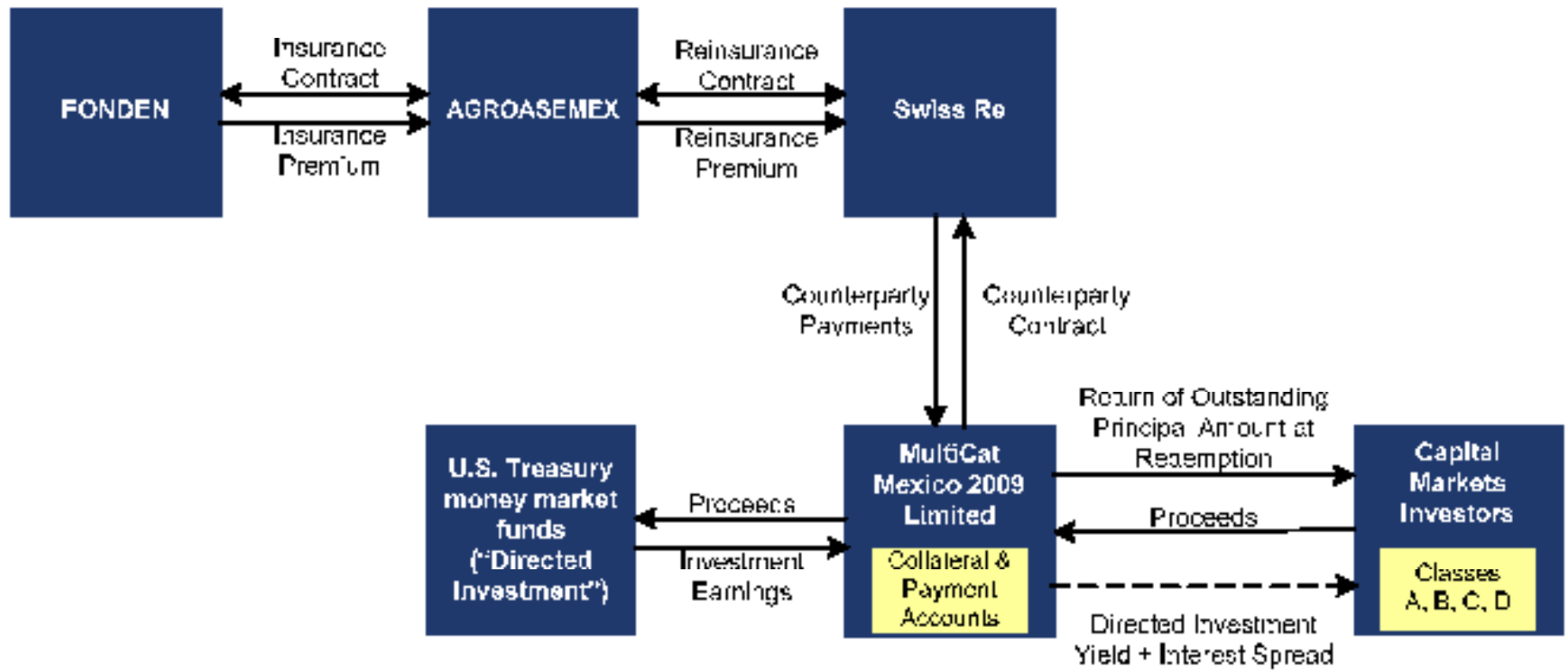
- **Second Issue by Sovereign**
- **3 year program**
- **Quake and Wind**
- **Parametric**
- **Multi-peril and Single peril structure**

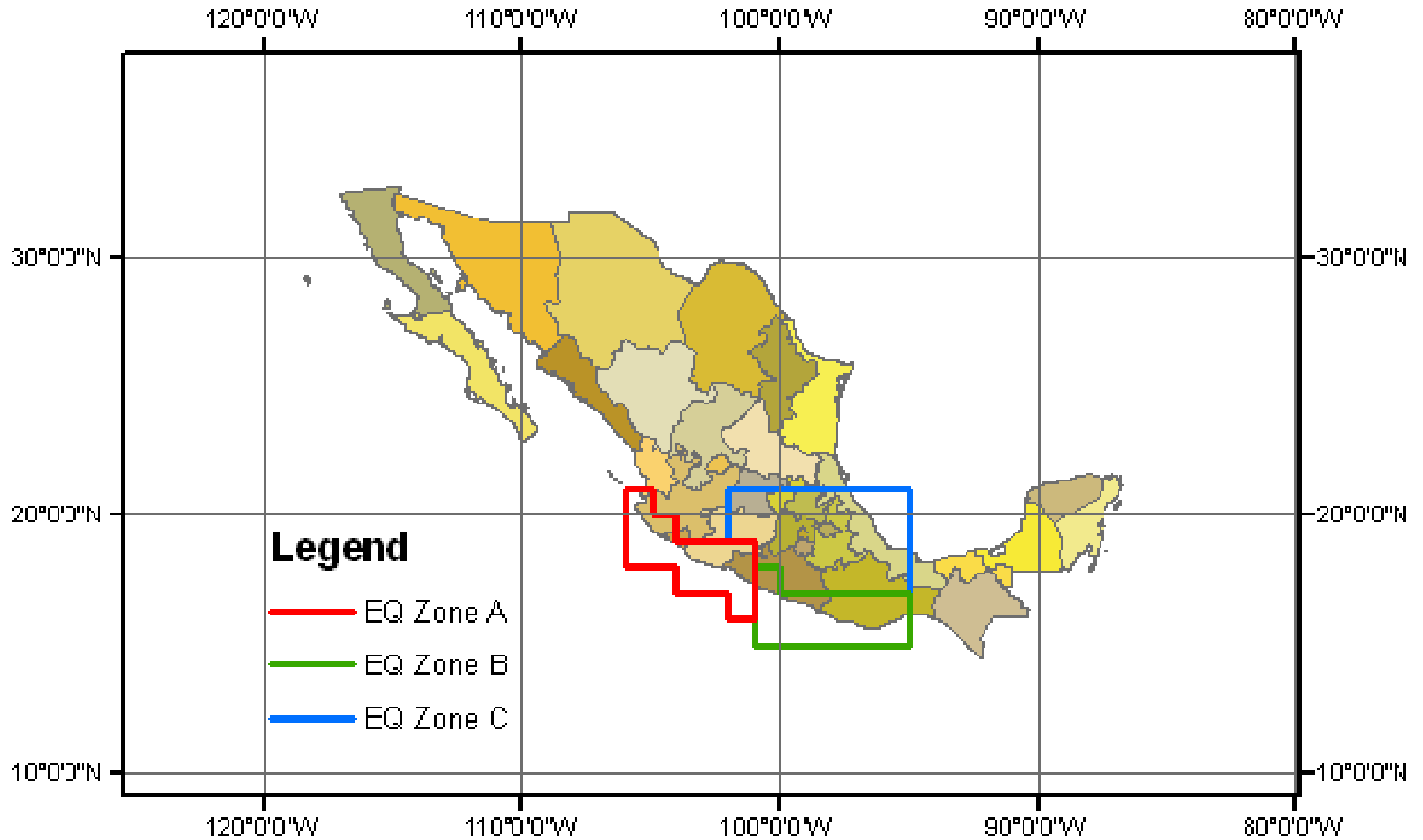
Secondary Market

- **After issuance ILS may trade over the counter, at whatever prices the market determines**
- **Thus a deal issued at $L + 10\%$ (i.e. $L + 1000$) may fall in price, or equivalently rise in yield.**
- **Par becomes 98 and the secondary yield becomes $L + 12\%$ a hardening market**
- **Such prices can be plotted against expected loss to show current risk return trade-offs**

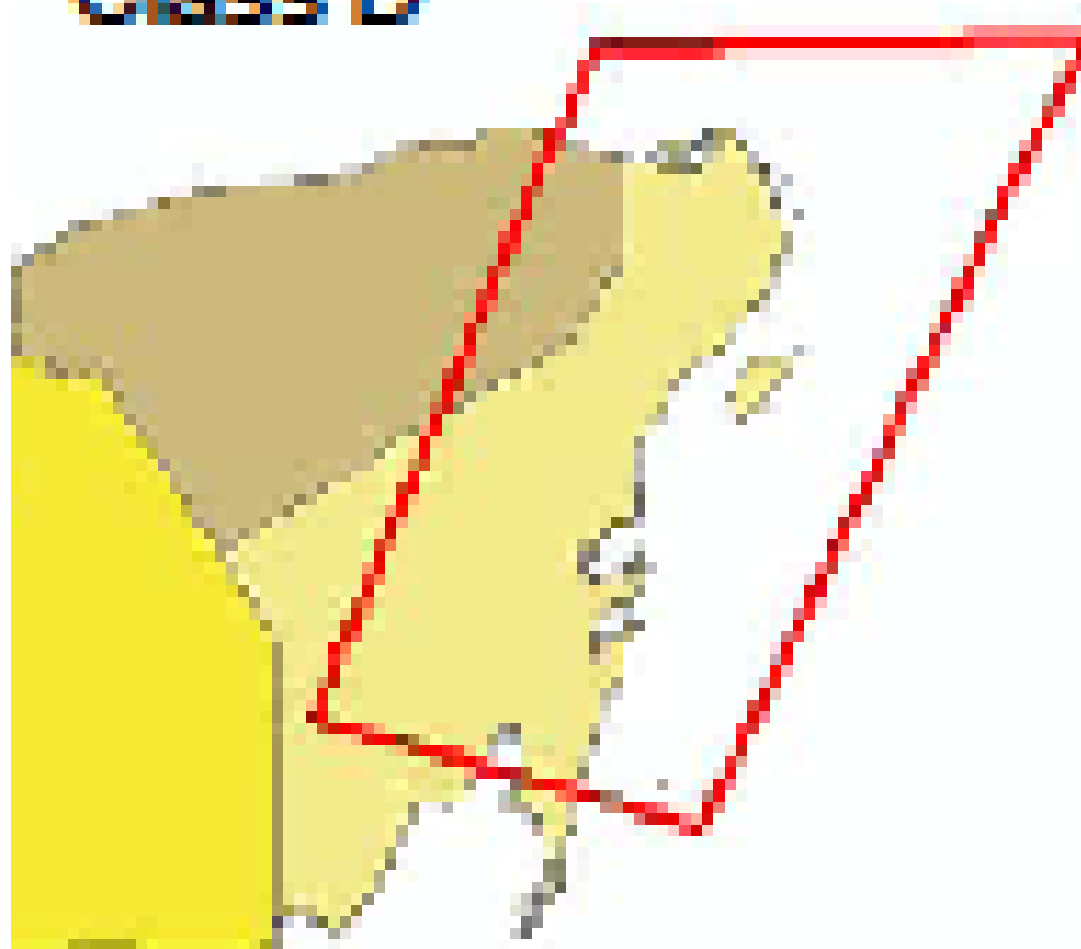
Figure 4







Class D



Terms	Class A	Class B	Class C	Class D
Notional:	[\$100] million	[\$50] million	[\$50] million	[\$50] million
Peril:	Earthquake	Pacific Hurricane	Pacific Hurricane	Atlantic Hurricane
Risk Period:	3 years	3 years	3 years	3 years
Trigger Type:	Parametric	Parametric	Parametric	Parametric
Principal Reduction Mechanism:	Binary	Binary	Binary	Binary
AIR Modeled Annualized Expected Loss:	4.65%	3.94%	4.00%	2.36%
Preliminary Rating (S&P):	[B]	[B]	[B]	[BB-]
Pricing	TMM + []	10.25 %	TMM + []	TMM + []

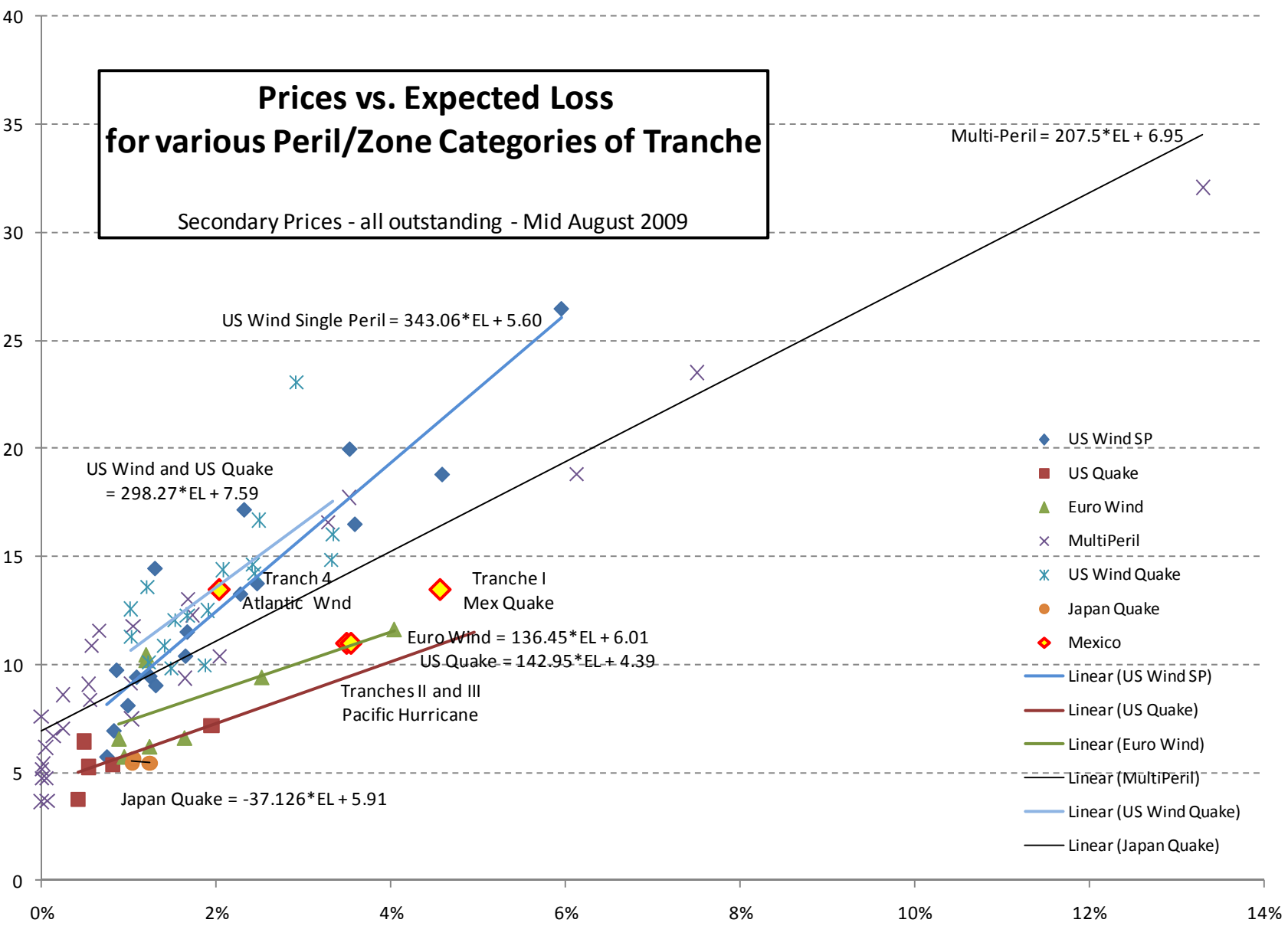
11.50 %

Prices vs. Expected Loss for various Peril/Zone Categories of Tranche

Secondary Prices - all outstanding - Mid August 2009

$$\text{Multi-Peril} = 207.5 * \text{EL} + 6.95$$

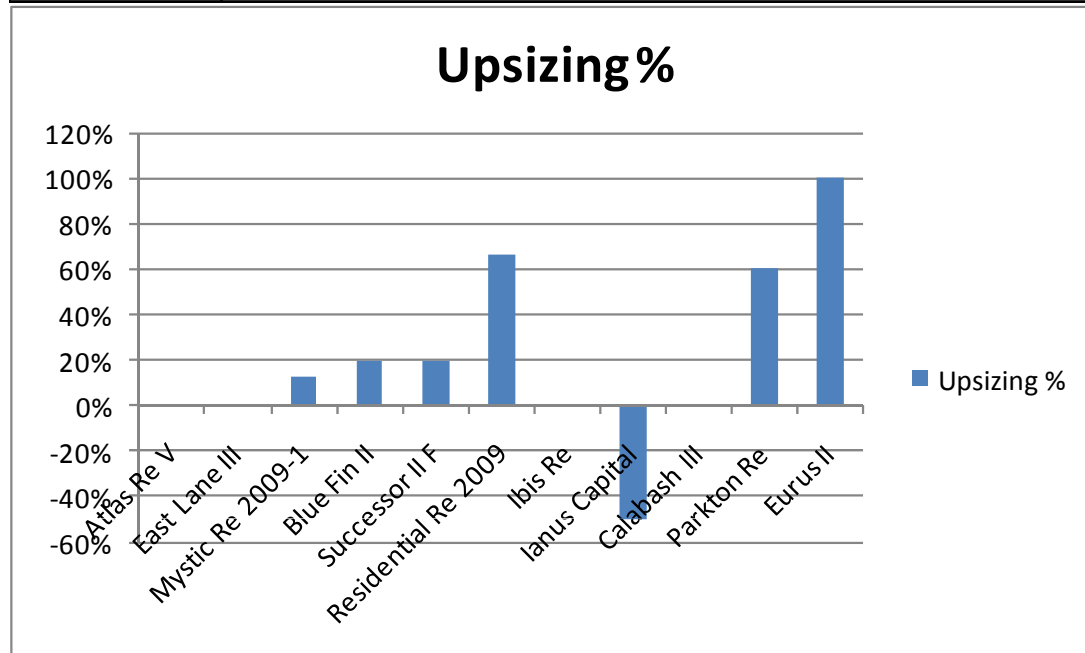
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Expected Loss

Table 1

Issue (listed in issue date order)	Proposed Issue Amount (\$000)	Actual Issue Amount (\$000)	Over (+) or Under (-) Subscribed (\$000)	Peril
Atlas Re V	200,000	200,000	0	US Wind, US EQ
East Lane III	150,000	150,000	0	US Wind
Mystic Re 2009-1	200,000	225,000	+25,000	US Wind, US EQ
Blue Fin II	150,000	180,000	+30,000	US Wind, US EQ
Successor II F	50,000	60,000	+10,000	US Wind, CA EQ
Residential Re 2009	150,000	250,000	+100,000	US Wind, US EQ
Ibis Re	150,000	150,000	0	US Wind
Ianus Capital	EUR 100,000 (\$137,160)	EUR50,000 (\$68,580)	-EUR50,000 (-\$68,580)	Euro Wind, Turkish EQ
Calabash III	100,000	100,000	0	US Wind, US EQ
Parkton Re	125,000	200,000	+75,000	NC US Wind
Eurus II	EUR75,000 (\$106,703)	EUR150,000 (\$213,405)	+EUR75,000 (+ \$106,703)	Euro Wind
Total	\$1,519,000	\$1,797,000	\$278,123	



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Pricing	TMM + []	TMM + []	TMM + []	TMM + []

11.50 %

10.25 %

10.25 %

10.25 %

END

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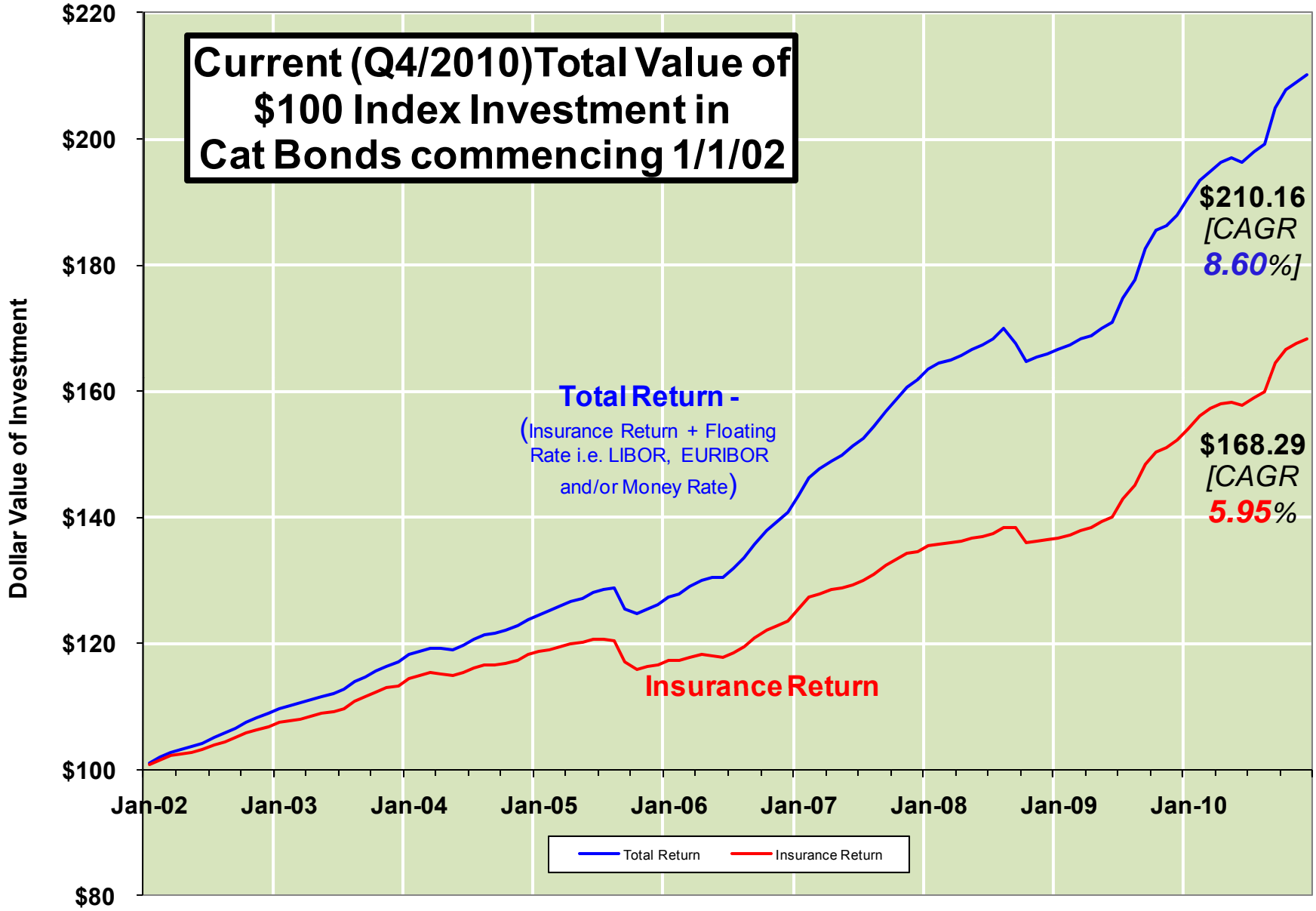
Additional Material

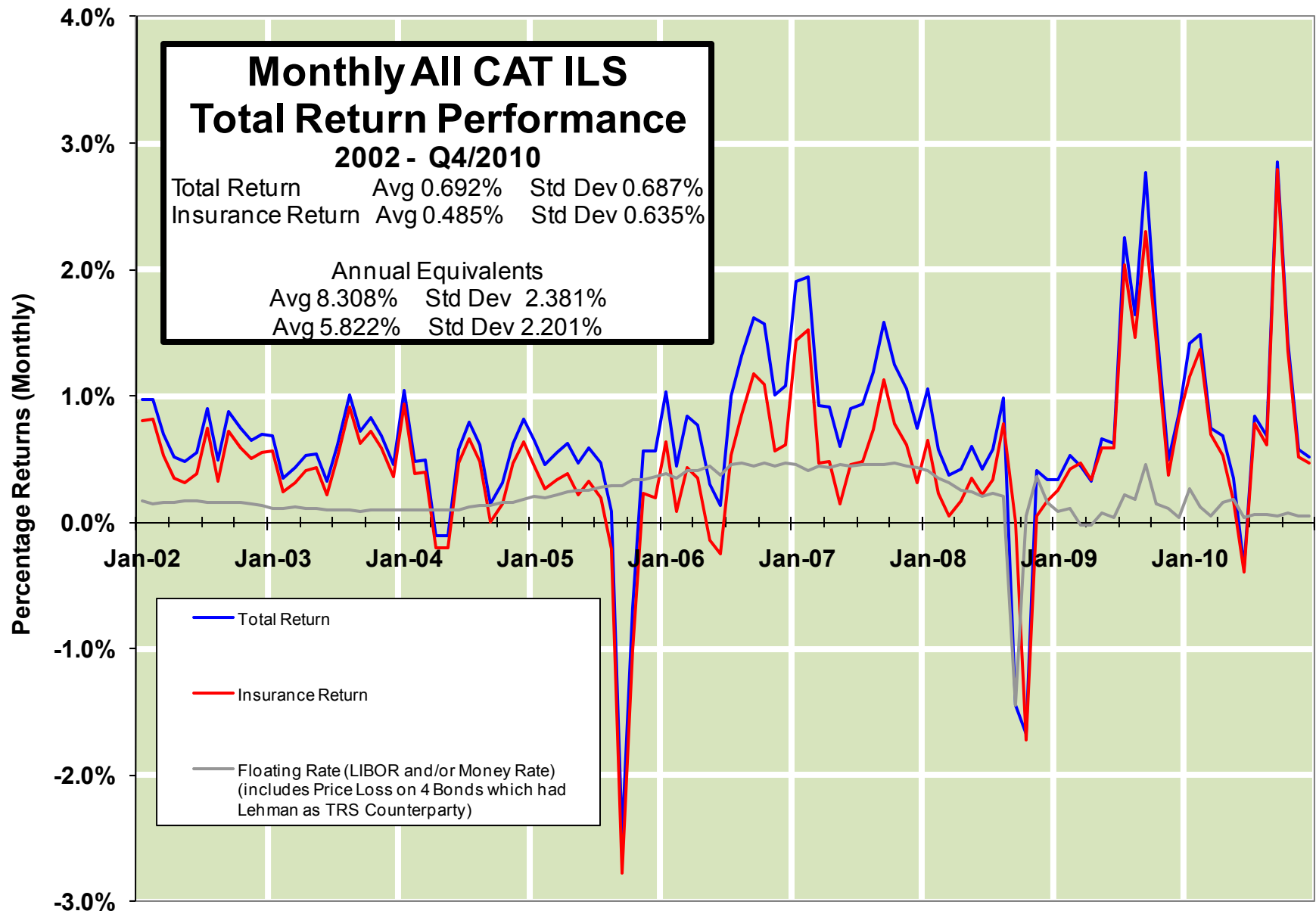
ILS Return Performance Benchmarking

And

Price Indices

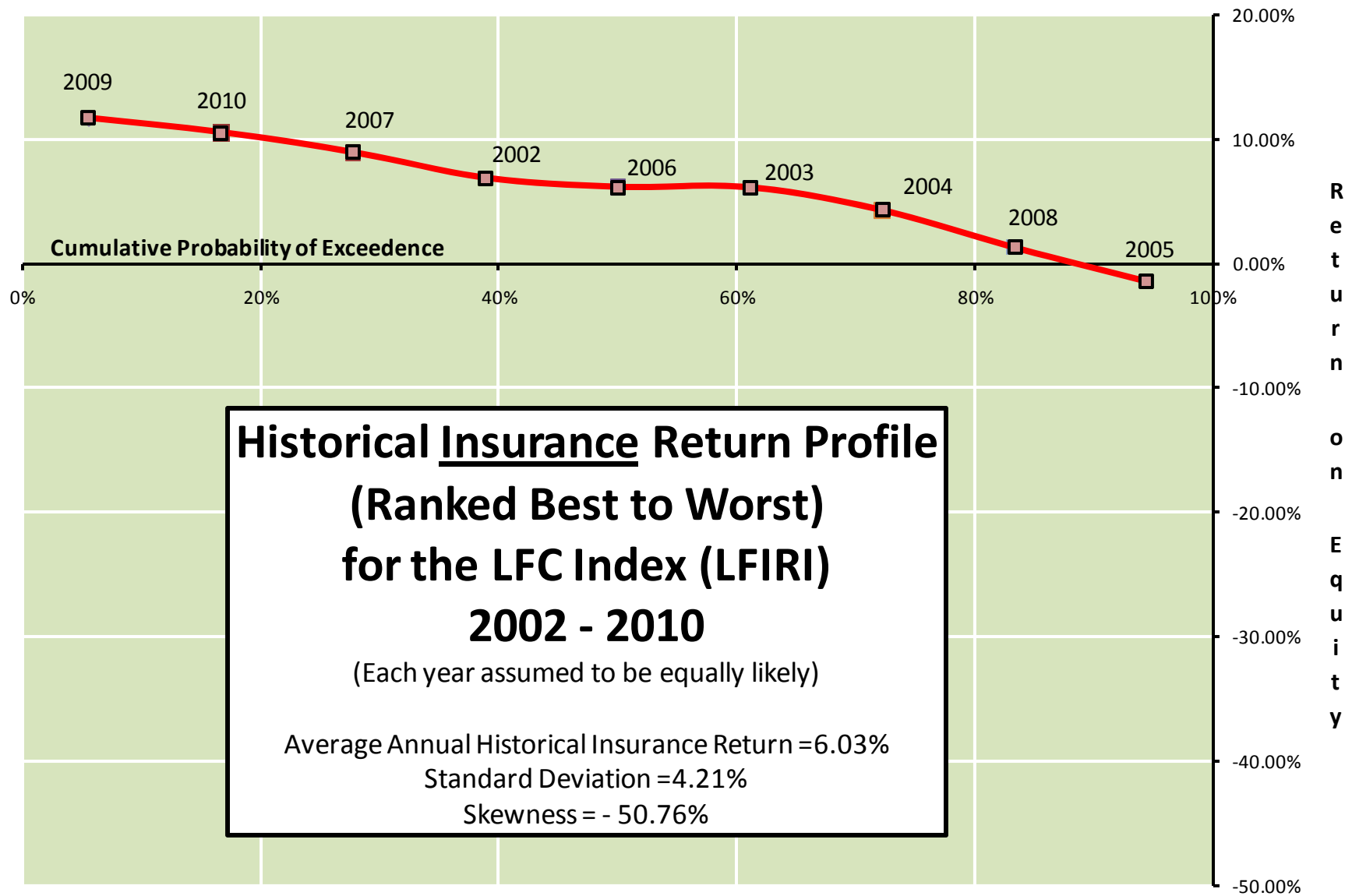
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Historical Insurance Return Profile
(Ranked Best to Worst)
for the LFC Index (LFIRI)
2002 - 2010
 (Each year assumed to be equally likely)

Average Annual Historical Insurance Return = 6.03%
 Standard Deviation = 4.21%
 Skewness = - 50.76%

Lane Financial Insurance Return Index (LFIRI) - Historical

All Cat ILS Total Returns

Rolling Returns -		3 Months	6 Months	9 Months	12 Months	Index Level
						100
End Mar	2002	2.67%	NA	NA	NA	102.67
End Jun	2002	1.56%	4.27%	NA	NA	104.27
End Sep	2002	2.29%	3.89%	6.67%	NA	106.67
End Dec	2002	2.11%	4.45%	6.08%	8.91%	108.91
End Mar	2003	1.47%	3.61%	5.99%	7.65%	110.52
End Jun	2003	1.40%	2.89%	5.06%	7.47%	112.06
End Sep	2003	2.37%	3.80%	5.33%	7.55%	114.72
End Dec	2003	1.98%	4.39%	5.85%	7.41%	116.98
End Mar	2004	2.03%	4.04%	6.51%	7.99%	119.36
End Jun	2004	0.36%	2.40%	4.42%	6.90%	119.79
End Sep	2004	1.55%	1.92%	3.98%	6.04%	121.64
End Dec	2004	1.77%	3.34%	3.72%	5.82%	123.79
End Mar	2005	1.68%	3.47%	5.07%	5.46%	125.87
End Jun	2005	1.69%	3.40%	5.23%	6.85%	128.00
End Sep	2005	-1.94%	-0.28%	1.39%	3.18%	125.52
End Dec	2005	0.44%	-1.51%	0.16%	1.84%	126.07
End Mar	2006	2.33%	2.78%	0.79%	2.50%	129.01
End Jun	2006	1.20%	3.57%	4.02%	2.00%	130.57
End Sep	2006	3.99%	5.24%	7.70%	8.17%	135.77
End Dec	2006	3.70%	7.84%	9.14%	11.69%	140.80
End Mar	2007	4.84%	8.72%	13.06%	14.42%	147.62
End Jun	2007	2.43%	7.39%	11.37%	15.81%	151.21
End Sep	2007	3.76%	6.28%	11.43%	15.55%	156.89
End Dec	2007	3.08%	6.96%	9.56%	14.86%	161.73
End Mar	2008	2.02%	5.17%	9.12%	11.78%	165.00
End Jun	2008	1.46%	3.52%	6.71%	10.72%	167.42
End Sep	2008	0.11%	1.57%	3.63%	6.82%	167.59
End Dec	2008	-0.94%	-0.84%	0.61%	2.65%	166.01
End Mar	2009	1.32%	0.37%	0.47%	1.94%	168.21
End Jun	2009	1.62%	2.97%	2.00%	2.10%	170.94
End Sep	2009	6.80%	8.54%	9.98%	8.94%	182.57
End Dec	2009	2.95%	9.96%	11.74%	13.22%	187.96
End Mar	2010	3.69%	6.76%	14.02%	15.87%	194.91
End Jun	2010	0.69%	4.41%	7.49%	14.81%	196.25
End Sep	2010	4.42%	5.14%	9.03%	12.25%	204.93
End Dec	2010	2.55%	7.09%	7.82%	11.81%	210.16

Note: The difference between Total Return and the Insurance Return is the Floating Return. Calculated monthly these two components are additive, however when monthly returns are compounded over several months, component numbers must be similarly compounded. Because of differential compounding, addition of the components may diverge over time from compounded total returns.

Lane Financial Insurance Return Index (LFIRI) - Historical

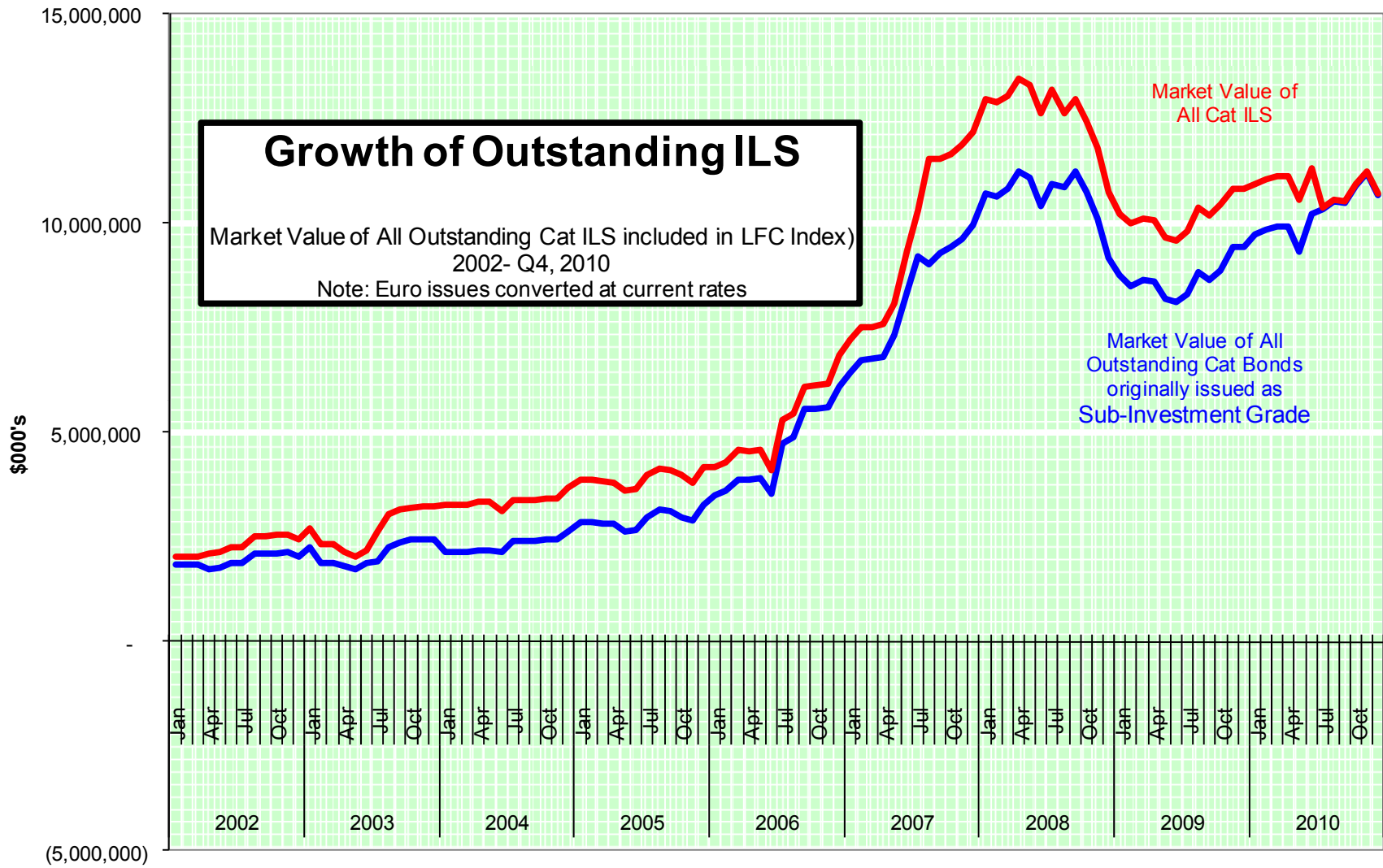
All Cat ILS

Insurance Return Component

Rolling Returns -		3 Months	6 Months	9 Months	12 Months	
						100
End Mar	2002	2.17%	NA	NA	NA	102.17
End Jun	2002	1.06%	3.25%	NA	NA	103.25
End Sep	2002	1.81%	2.88%	5.11%	NA	105.11
End Dec	2002	1.66%	3.50%	4.59%	6.86%	106.86
End Mar	2003	1.13%	2.81%	4.67%	5.78%	108.07
End Jun	2003	1.07%	2.21%	3.91%	5.79%	109.23
End Sep	2003	2.08%	3.16%	4.33%	6.07%	111.49
End Dec	2003	1.68%	3.79%	4.90%	6.09%	113.37
End Mar	2004	1.72%	3.43%	5.58%	6.71%	115.32
End Jun	2004	0.07%	1.79%	3.50%	5.65%	115.40
End Sep	2004	1.15%	1.22%	2.96%	4.70%	116.73
End Dec	2004	1.26%	2.43%	2.50%	4.26%	118.20
End Mar	2005	1.05%	2.33%	3.50%	3.57%	119.45
End Jun	2005	0.94%	2.00%	3.29%	4.48%	120.57
End Sep	2005	-2.79%	-1.88%	-0.85%	0.41%	117.20
End Dec	2005	-0.59%	-3.37%	-2.46%	-1.44%	116.51
End Mar	2006	1.17%	0.57%	-2.24%	-1.32%	117.87
End Jun	2006	-0.03%	1.14%	0.54%	-2.27%	117.83
End Sep	2006	2.58%	2.55%	3.75%	3.13%	120.87
End Dec	2006	2.29%	4.93%	4.90%	6.13%	123.65
End Mar	2007	3.48%	5.85%	8.58%	8.55%	127.95
End Jun	2007	1.08%	4.60%	7.00%	9.76%	129.33
End Sep	2007	2.36%	3.47%	7.07%	9.53%	132.39
End Dec	2007	1.72%	4.12%	5.25%	8.91%	134.66
End Mar	2008	0.93%	2.67%	5.09%	6.23%	135.92
End Jun	2008	0.75%	1.69%	3.44%	5.88%	136.94
End Sep	2008	1.13%	1.88%	2.83%	4.60%	138.48
End Dec	2008	-1.51%	-0.40%	0.35%	1.28%	136.39
End Mar	2009	1.14%	-0.38%	0.74%	1.49%	137.95
End Jun	2009	1.53%	2.69%	1.14%	2.28%	140.06
End Sep	2009	5.92%	7.54%	8.77%	7.13%	148.35
End Dec	2009	2.65%	8.72%	10.39%	11.65%	152.28
End Mar	2010	3.25%	5.99%	12.26%	13.97%	157.23
End Jun	2010	0.31%	3.57%	6.31%	12.60%	157.71
End Sep	2010	4.24%	4.56%	7.96%	10.82%	164.40
End Dec	2010	2.42%	6.76%	7.09%	10.57%	168.38

Note: The difference between Total Return and the Insurance Return is the Floating Return.

Calculated monthly these two components are additive, however when monthly returns are compounded over several months, component numbers must be similarly compounded. Because of differential compounding, addition of the components may diverge over time from compounded total returns.



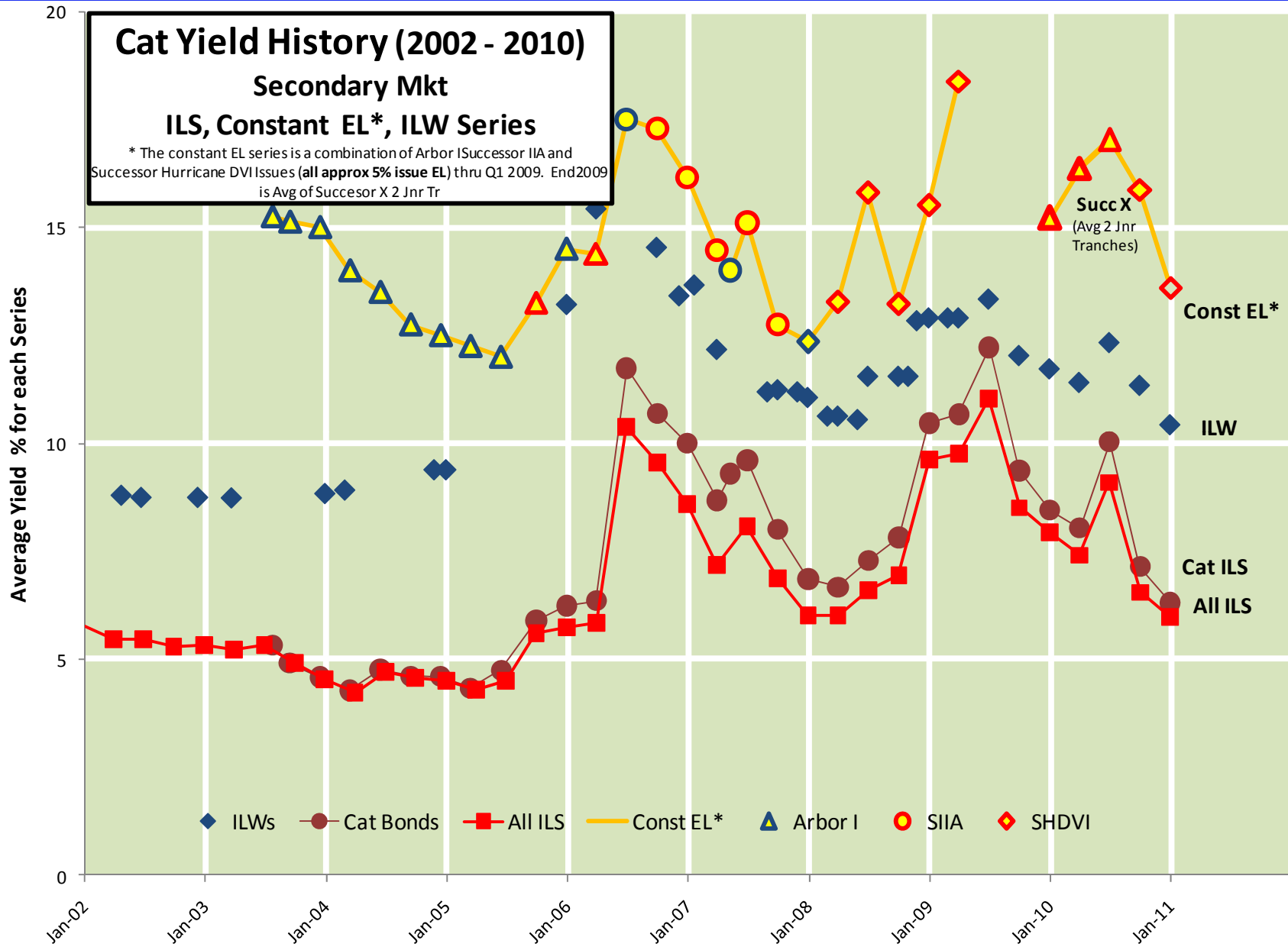
Price Indices

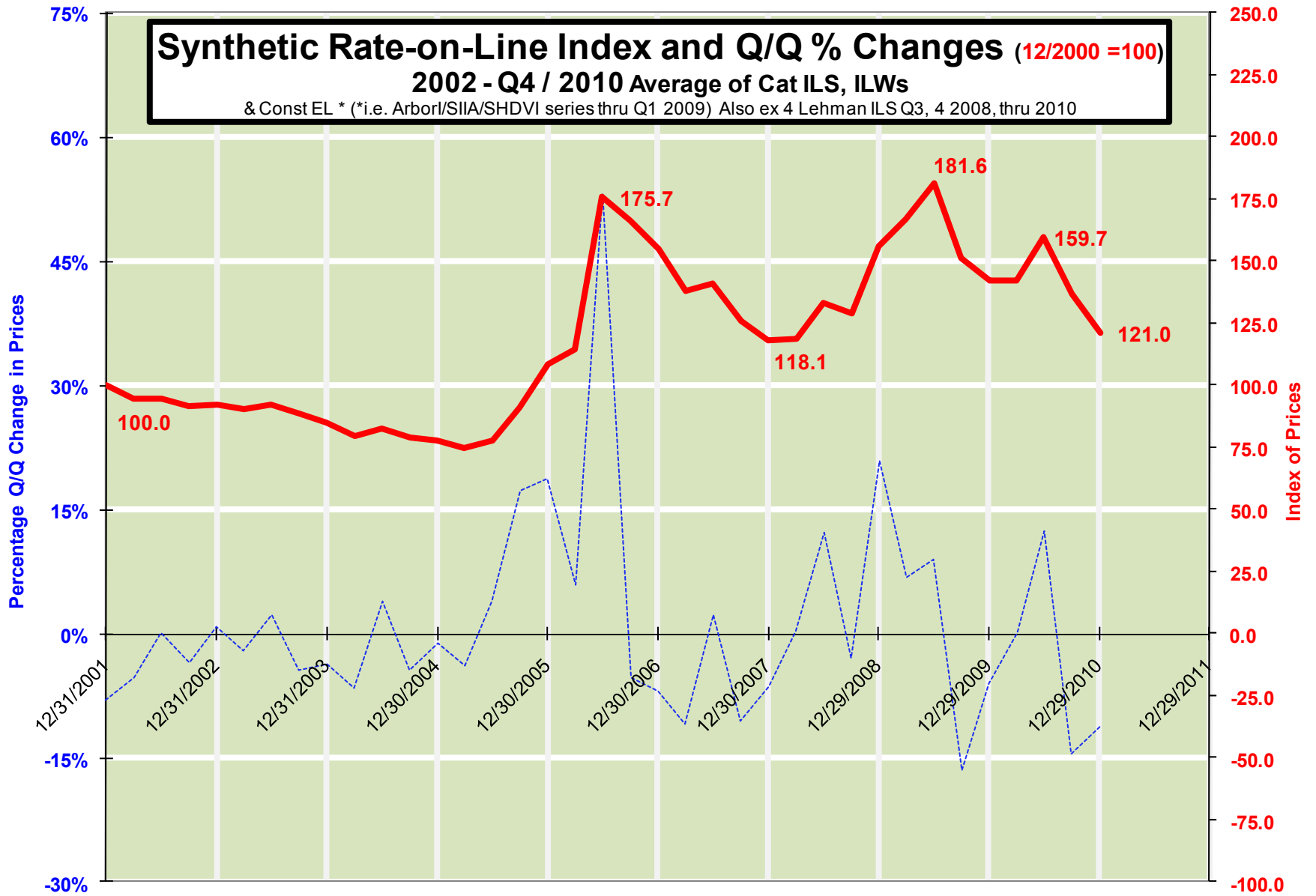
Cat Yield History (2002 - 2010)

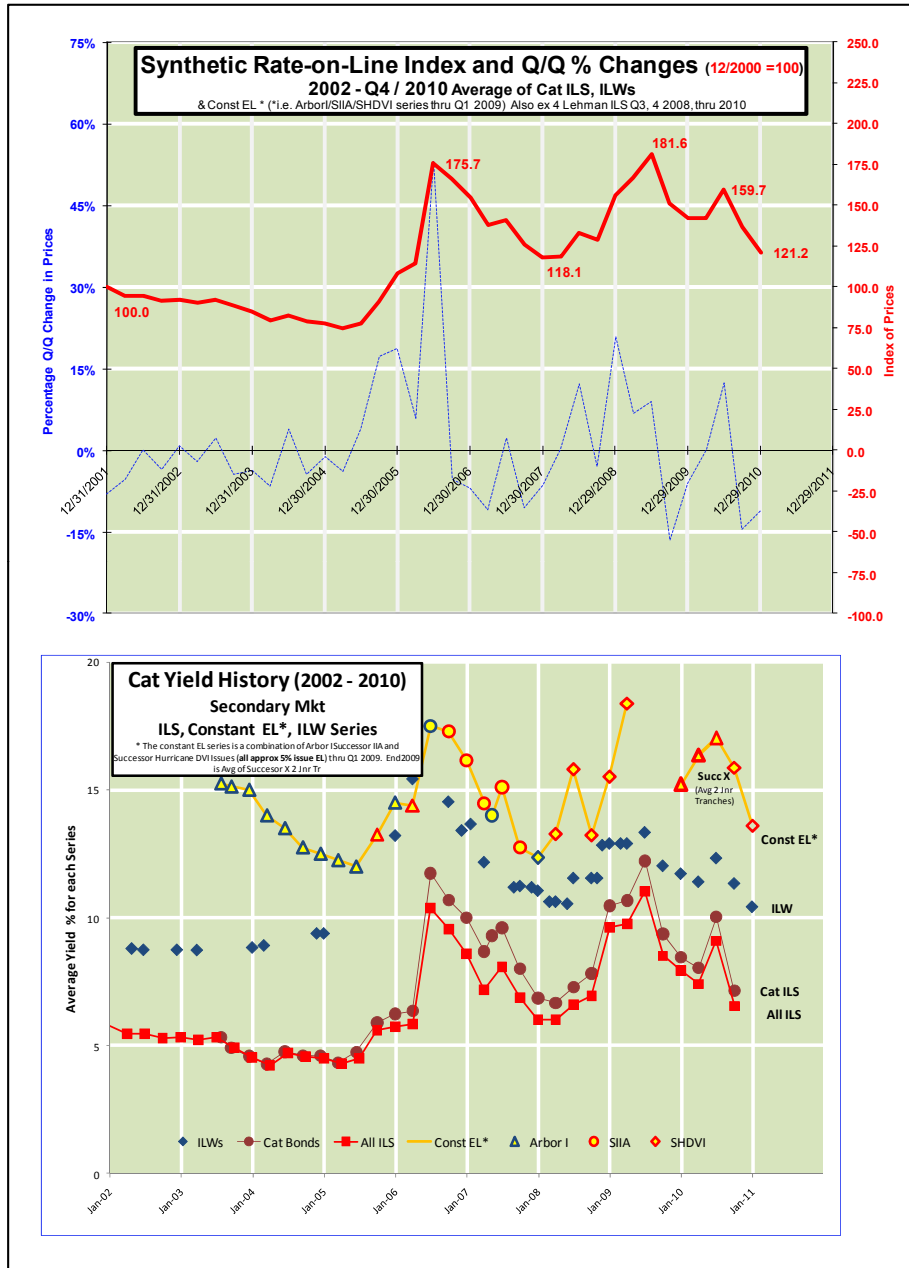
Secondary Mkt

ILS, Constant EL*, ILW Series

* The constant EL series is a combination of Arbor I Successor IIA and Successor Hurricane DVI Issues (all approx 5% issue EL) thru Q1 2009. End2009 is Avg of Successor X 2 Jnr Tr

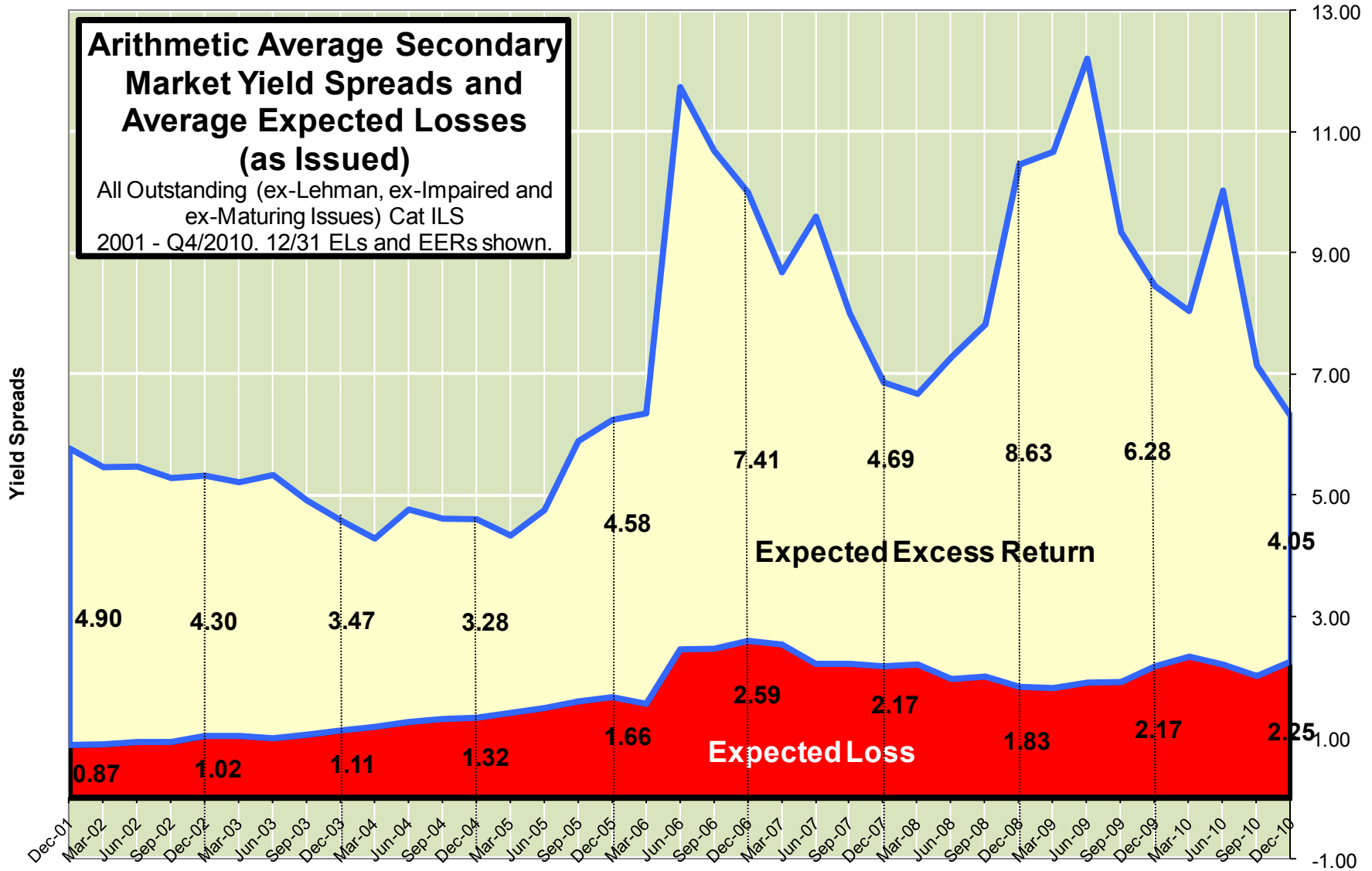


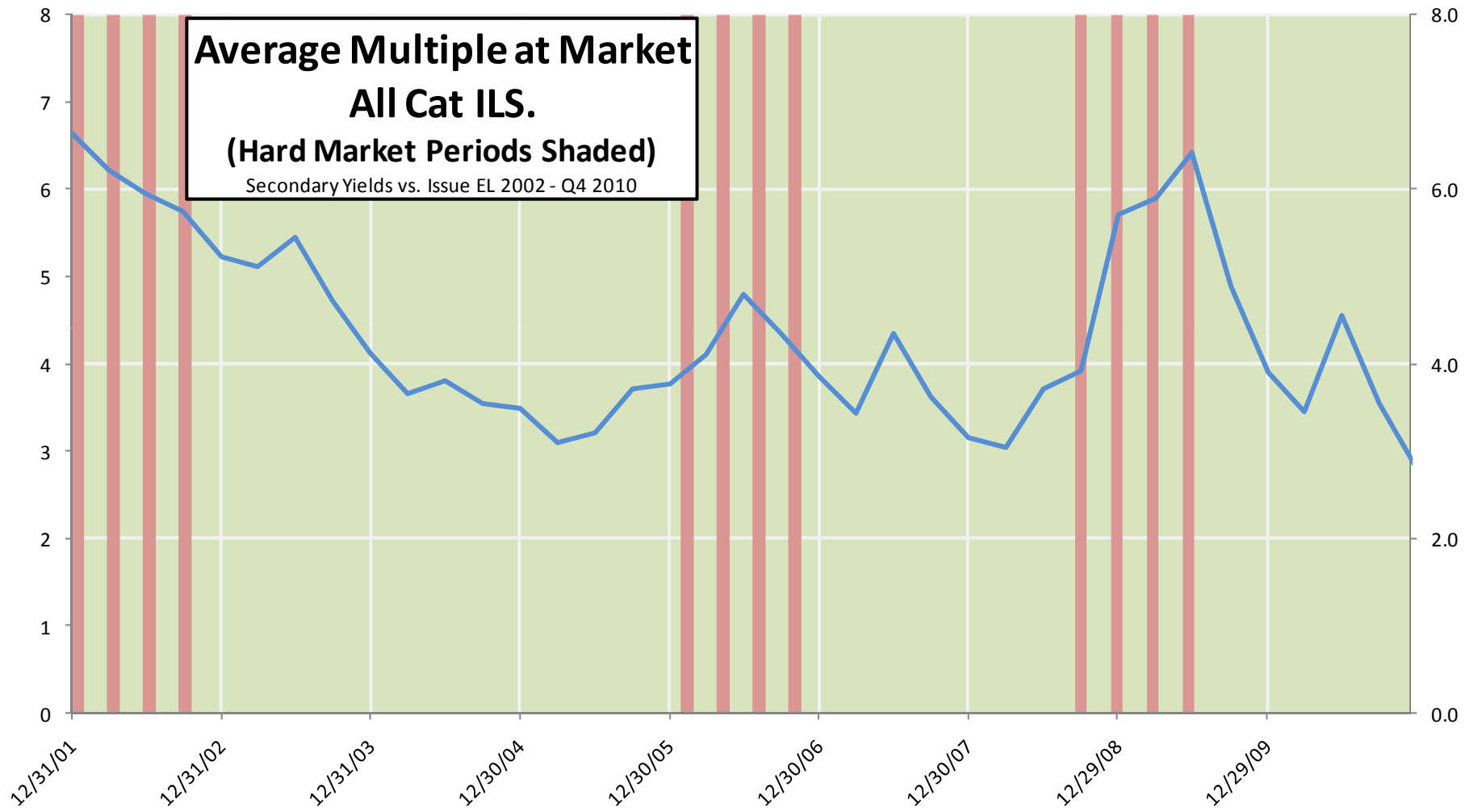


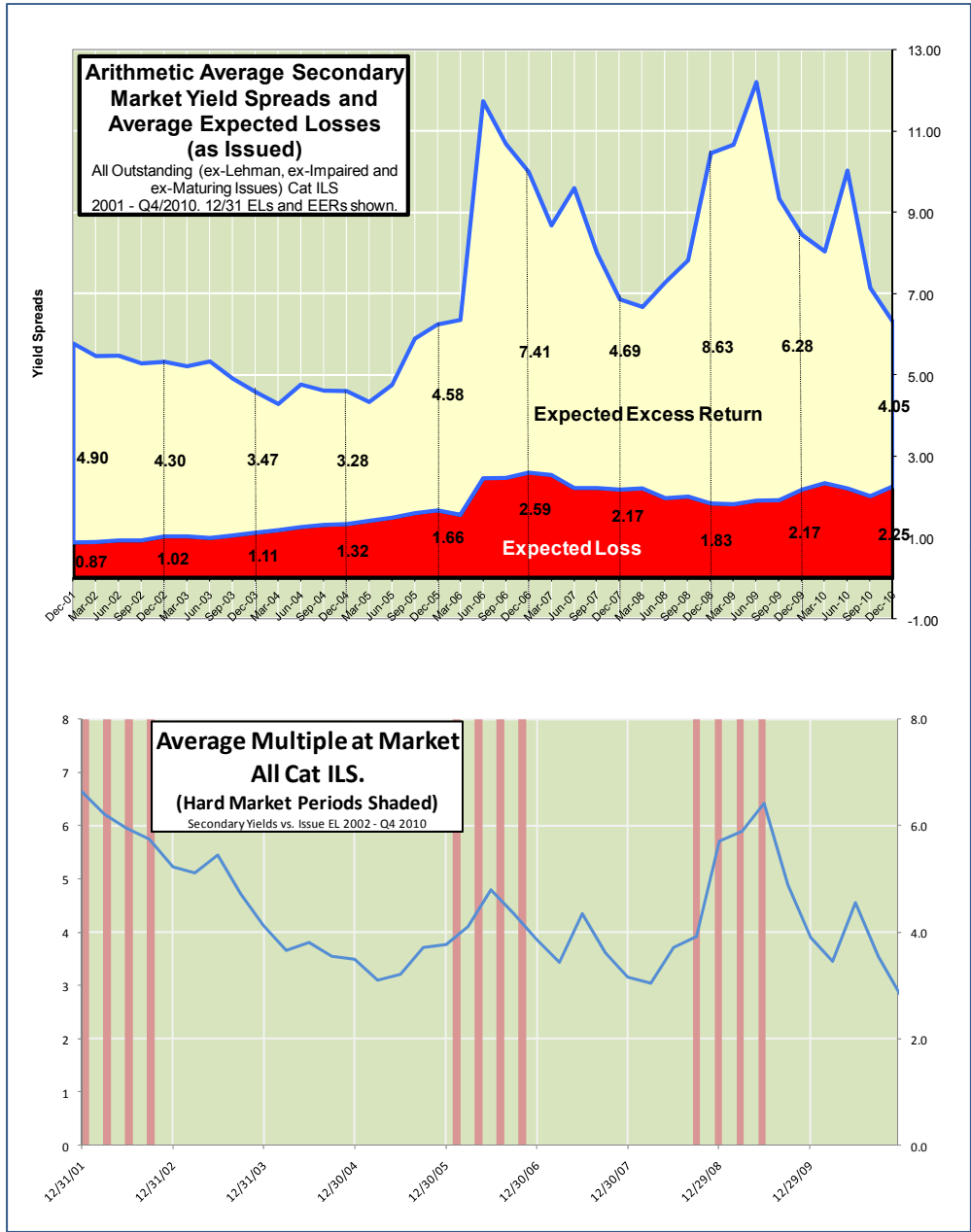


**Arithmetic Average Secondary
Market Yield Spreads and
Average Expected Losses
(as Issued)**

All Outstanding (ex-Lehman, ex-Impaired and
ex-Maturing Issues) Cat ILS
2001 - Q4/2010. 12/31 ELs and EERs shown.

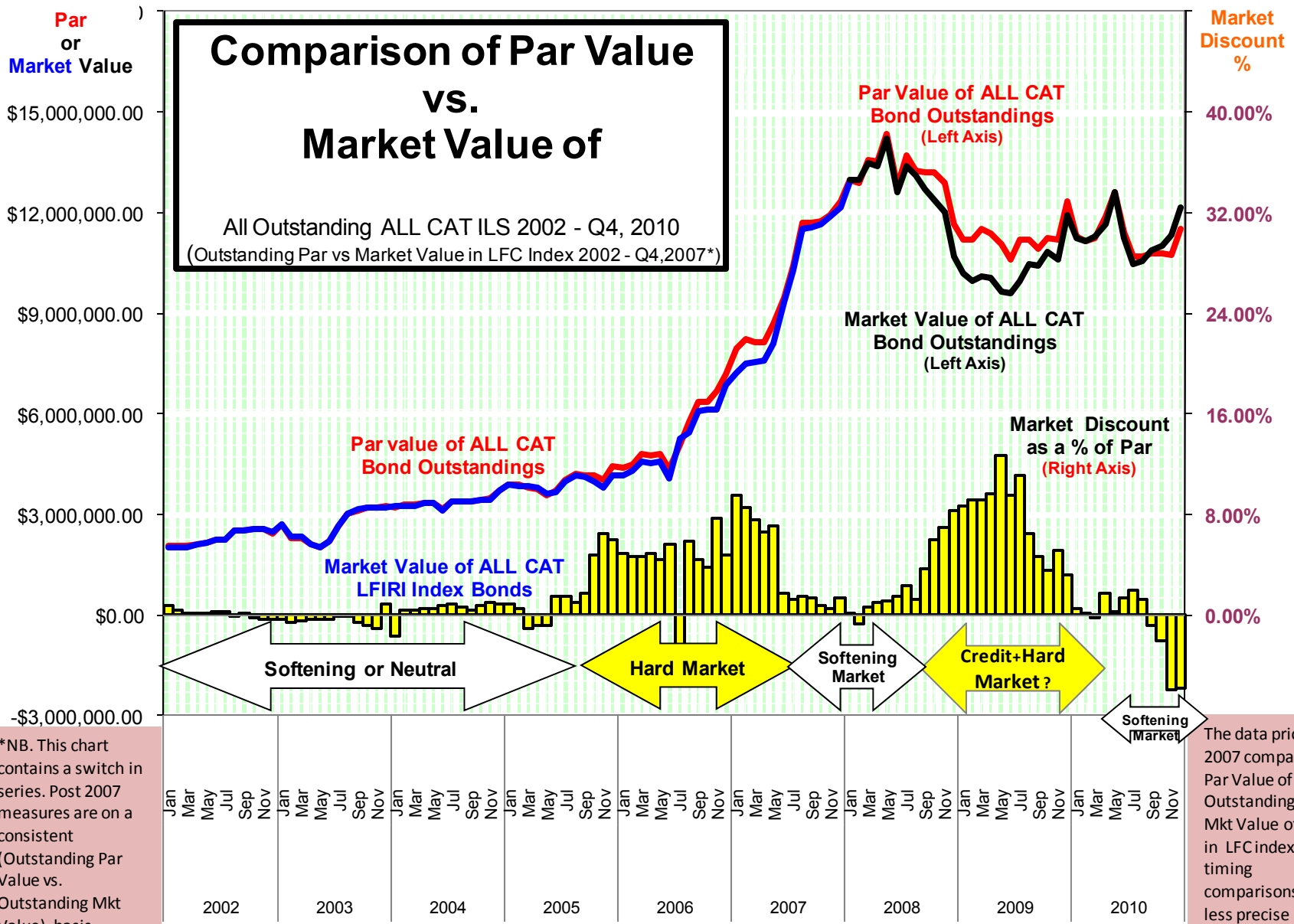






CAT Issues	Peril	Issue Date	Maturity	Issue Amount in USD Mil	Spread at Issue	Original Rating	Loss Type	Sponsor	Trigger Likely?
Atlas VI 2009-1	Euro Wind, Japan EQ	12/9/2009	4/6/2013	111,000	9.50%	BB-	Parametric Index - Aggregate	SCOR	Possibly
Atlas VI 2010-1	Euro Wind, JP Quake	12/9/2010	4/7/2014	98,948	10.50%	B-	Paradex Index	SCOR	?
MIDORI	Japan Quake	10/15/2007	10/24/2012	260,000	2.75%	BB+	Parametric - concentric rings circling Tokyo	Munich Re	Unlikely
Montana 2010-1 E	US, JP, EU Wind, US, JP EQ	12/22/2010	1/8/2014	60,000	9.50%	B+	2nd Event - Parametric Index (Paradex)	Flagstone Re	No
Muteki Ltd.	Japan Quake	5/24/2008	5/24/2011	300,000	4.40%	BB	Parametric Index (Paradex) - Tokyo area	Munich Re	Possibly
Successor X Class II-BY3	US Wind, Cal EQ, EuroWind, Japan EQ	3/26/2010	4/4/2013	40,000	16.75%	NR	Parametric	Swiss Re	?
Topiary 2008-1 Class A	US Wind, US Quake, Euro Wind, Japan Quake	8/2/2008	8/2/2011	200,000	4.75%	BB+	2nd event - Parametric Index	Platinum Re	No
Valais Re Class A	US/Euro/JP Wind, US/JP EQ, Others	5/22/2008	6/6/2011	64,000	8.00%	BB	Indemnity - Aggregate (\$660 M attachment)	Flagstone Re	?
Valais Re Class C	US/Euro/JP Wind, US/JP EQ, Others	5/22/2008	6/6/2011	40,000	14.50%	B-	Indemnity - Occurrence (\$364 M attachment)	Flagstone Re	?
Vega Capital Ltd. 2008-1 Class A	U.S./Euro Wind, CA/JP EQ, JP Wind	6/11/2008	6/24/2011	21,000	2.50%	A-	5 event aggregate - Parametric Inx - limit by peril	Swiss Re	No
Vega Capital Ltd. 2008-1 Class B	U.S./Euro Wind, CA/JP EQ, JP Wind	6/11/2008	6/24/2011	22,500	3.00%	BBB	4 event aggregate - Parametric Inx - limit by peril	Swiss Re	No
Vega Capital Ltd. 2008-1 Class C	U.S./Euro Wind, CA/JP EQ, JP Wind	6/11/2008	6/24/2011	63,900	5.75%	BB-	3 event aggregate - Parametric Inx - limit by peril	Swiss Re	No
Vega Capital 2010 C	US/Euro Wind, CA/JP EQ, JP Wind	12/13/2010	12/20/2013	63,900	5.65%	BB-	3 event aggregate - Parametric Inx - limit by peril	Swiss Re	No
Vita III - 4 tranches	Extreme Mortality - US, UK Ger, Japan, Can			1,345,248			Extreme Mortality measured over 2 year period	Swiss Re	No
Vita IV - 4 tranches	Extreme Mortality - US, UK Ger, Japan, Can			447,840			Extreme Mortality measured over 2 year period	Swiss Re	No
				300,000					
				2,093,088					

CAT Issues	Loss Type	Average Bid		
		3/4/2011	3/11/2011	3/18/2011
Atlas VI 2009-1	Parametric Index - Aggregate	102.47	99.29	97.36
Atlas VI 2010-1	Paradex Index	101.58	95.03	94.04
MIDORI	Parametric - concentric rings circling Tokyo	100.33	98.78	98.58
Montana 2010-1 E	2nd Event - Parametric Index (Paradex)	99.43	88.14	85.18
Muteki Ltd.	Parametric Index (Paradex) - Tokyo area	100.32	97.40	72.98
Succesor X Class II-BY3	Parametric	95.38	90.28	89.53
Topiary 2008-1 Class A	2nd event - Parametric Index	100.62	97.87	92.63
Valais Re Class A	Indemnity - Aggregate (\$660 M attachment)	100.90	96.49	87.97
Valais Re Class C	Indemnity - Occurrence (\$364 M attachment)	102.74	99.85	86.39
Vega Capital Ltd. 2008-I Class A	5 event aggregate - Parametric Inx - limit by peril	99.97	99.70	99.72
Vega Capital Ltd. 2008-I Class B	4 event aggregate - Parametric Inx - limit by peril	100.14	99.08	99.17
Vega Capital Ltd. 2008-I Class C	3 event aggregate - Parametric Inx - limit by peril	100.95	99.59	99.68
Vega Capital 2010 C	3 event aggregate - Parametric Inx - limit by peril	99.85	96.90	93.16



*NB. This chart contains a switch in series. Post 2007 measures are on a consistent (Outstanding Par Value vs. Outstanding Mkt Value) basis.

The data prior to 2007 compares Par Value of Outstandings to Mkt Value of deals in LFC index. Thus timing comparisons are less precise

Returns on 3 Different LFIRI Indices

- All Cat
- All (Sub-Inv Grade) Cat
- All (Sub-Inv Grade) ILS

\$100 Invested 1/2002 and compounded to Q4/2010

